US009199167B2

(12) **United States Patent**
Kawamoto et al.

(10) **Patent No.: US 9,199,167 B2**
(45) **Date of Patent: Dec. 1, 2015**

(54) GAME APPARATUS, STORAGE MEDIUM, GAME CONTROLLING METHOD AND GAME SYSTEM USING STEP COUNT DATA

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(73) Assignee: **Nintendo Co., Ltd.**, Kyoto (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 245 days.

(21) Appl. No.: **13/177,011**

(22) Filed: **Jul. 6, 2011**

(65) **Prior Publication Data**

US 2012/0214595 A1 Aug. 23, 2012

(30) **Foreign Application Priority Data**

Feb. 23, 2011 (JP) 2011-036681

(51) **Int. Cl.**

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A63F 13/00	(2014.01)
G06F 17/00	(2006.01)
G06F 19/00	(2011.01)
A63F 13/20	(2014.01)
A63F 13/40	(2014.01)

(52) **U.S. Cl.**

CPC ***A63F 13/06*** (2013.01); ***A63F 13/10*** (2013.01); *A63F 2300/105* (2013.01); *A63F 2300/204* (2013.01); *A63F 2300/609* (2013.01)

(58) **Field of Classification Search**

CPC G04B 47/063; G01C 22/006; A63F 9/24
USPC 463/1, 7, 36, 43
See application file for complete search history.

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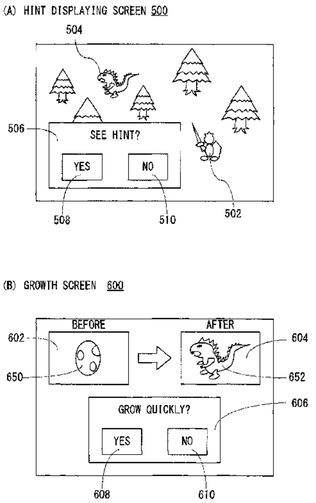
(Continued)

Primary Examiner — Kevin Y Kim
(74) *Attorney, Agent, or Firm* — Nixon & Vanderhye, P.C.

(57) ABSTRACT

A game apparatus includes a micon, and the micon measures step counts in correspondence with the magnitude of accelerations indicated by acceleration data from an acceleration sensor when a user carries the game apparatus in a sleep mode in which the apparatus is closed. The step counts are converted into earned coins. In each of a plurality of games executed by the game apparatus, by using the earned coins, a special item is purchased, playing in a special course is permitted, a hint is displayed, and a game is played in fast-forward.

25 Claims, 26 Drawing Sheets


(A) HINT DISPLAYING SCREEN 500
(B) GROWTH SCREEN 600

(56) **References Cited**

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* cited by examiner

FIG. 1

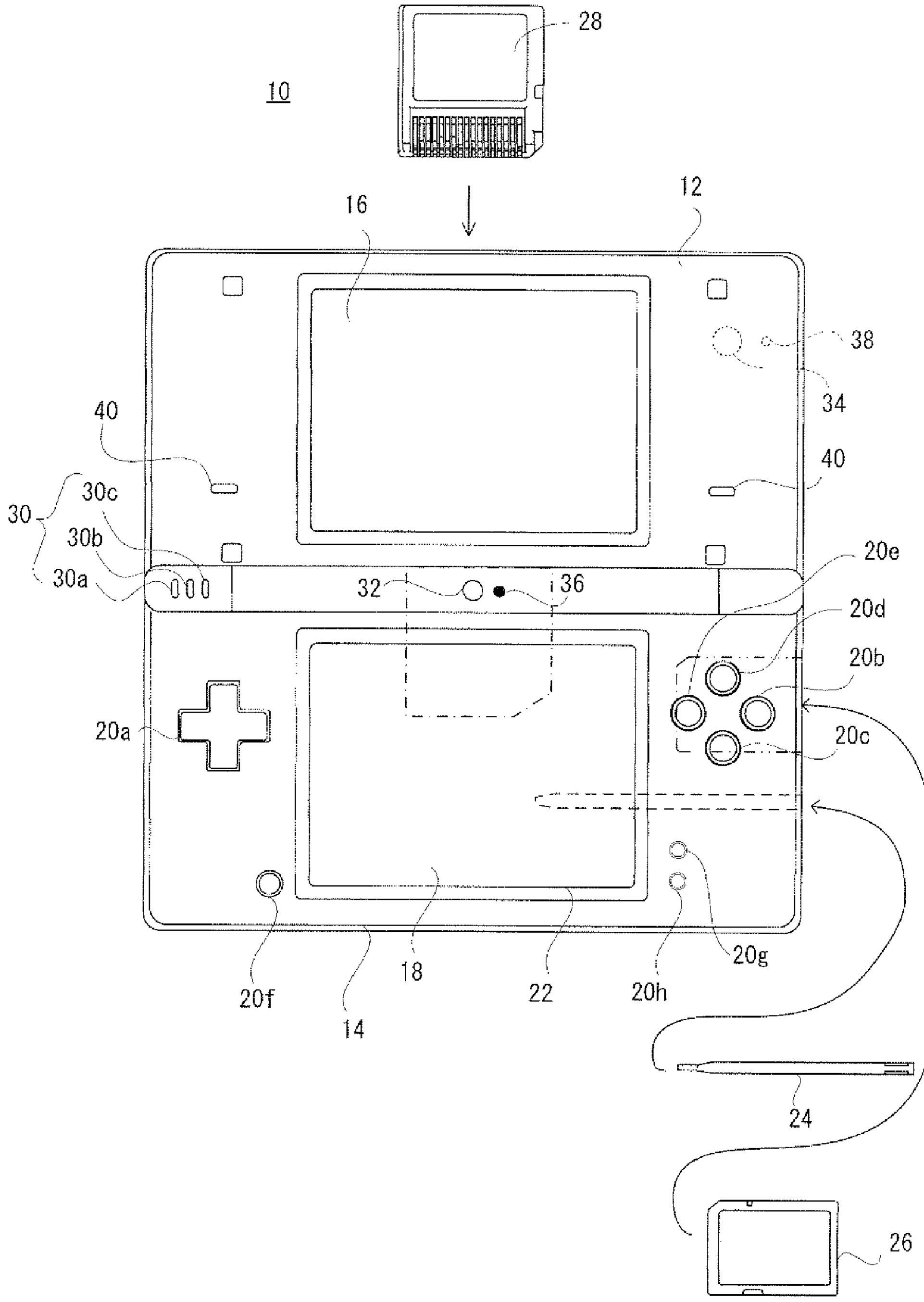
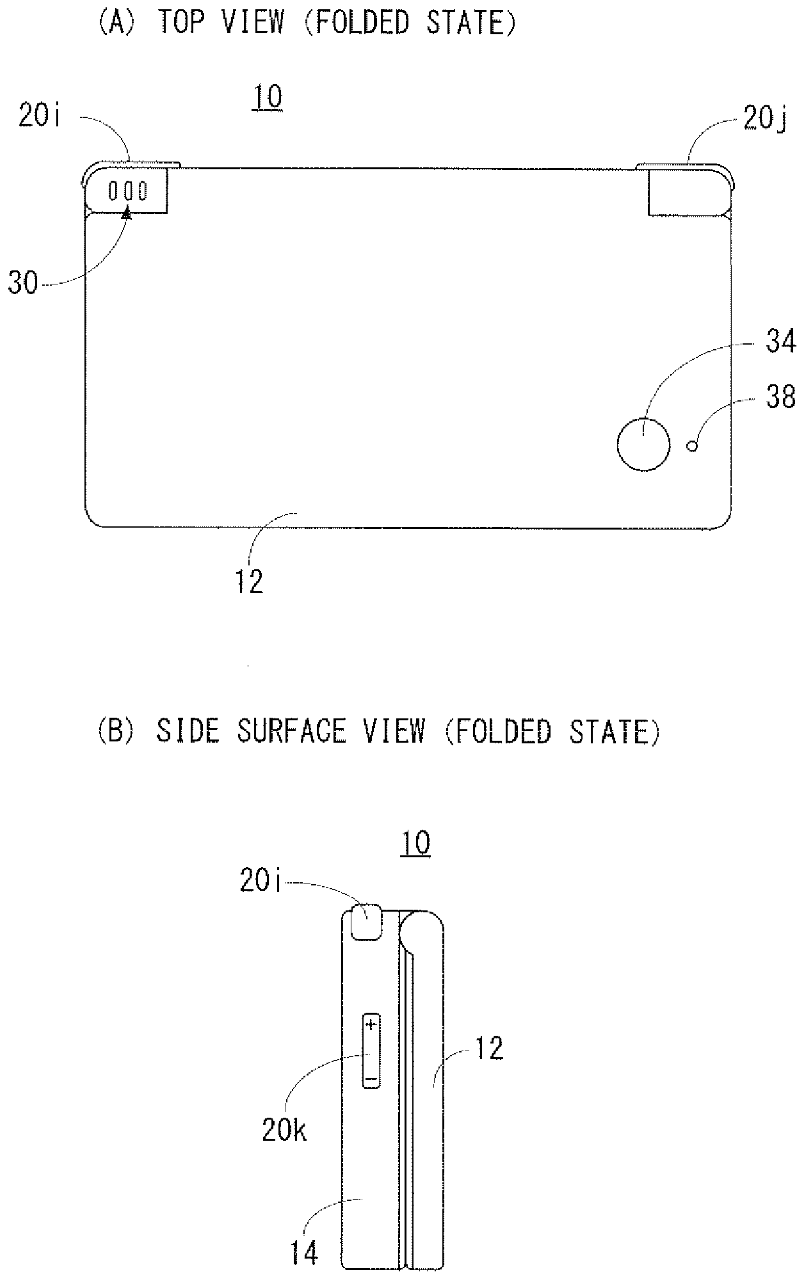

28
10
12
16
38
34
40
40
30
30c
30b
30a
32
36
20e
20d
20b
20a
20c
20f
14
18
22
20h
20g
24
26

FIG. 2



(A) TOP VIEW (FOLDED STATE)

(B) SIDE SURFACE VIEW (FOLDED STATE)

FIG. 3

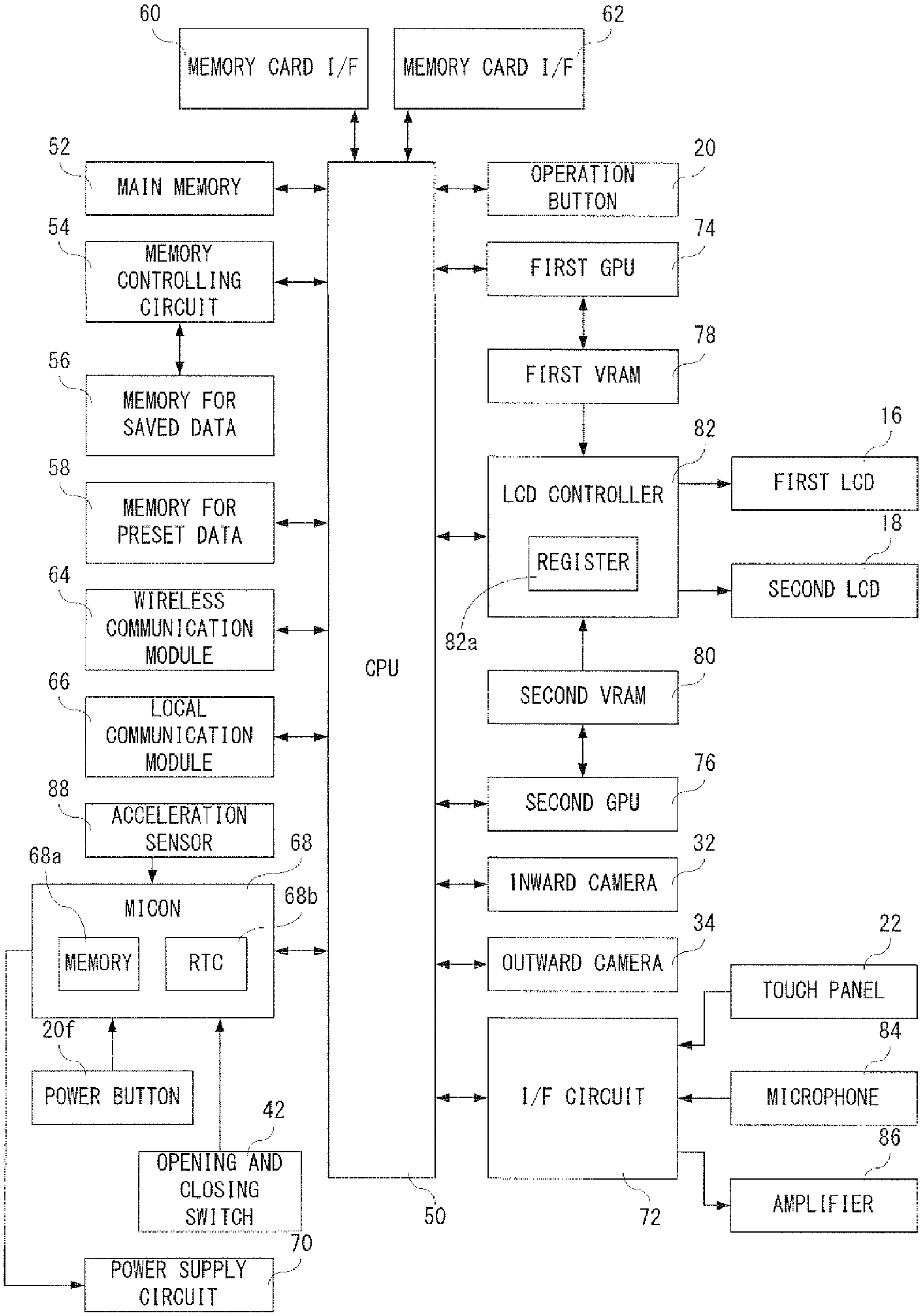
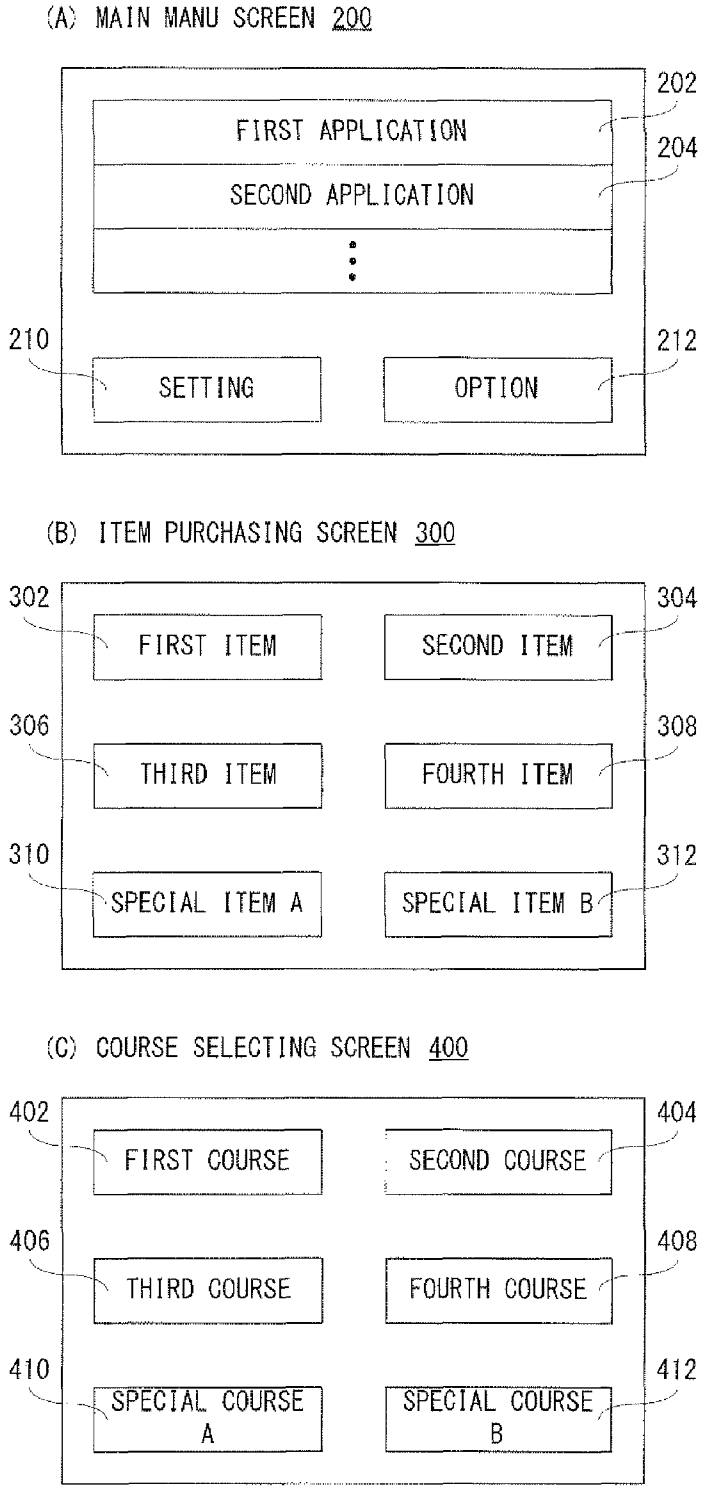

60
MEMORY CARD I/F
62
MEMORY CARD I/F
52
MAIN MEMORY
54
MEMORY CONTROLLING CIRCUIT
56
MEMORY FOR SAVED DATA
58
MEMORY FOR PRESET DATA
64
WIRELESS COMMUNICATION MODULE
66
LOCAL COMMUNICATION MODULE
88
ACCELERATION SENSOR
68a
68
MICON
68b
MEMORY
RTC
20f
POWER BUTTON
42
OPENING AND CLOSING SWITCH
70
POWER SUPPLY CIRCUIT
CPU
50
20
OPERATION BUTTON
74
FIRST GPU
78
FIRST VRAM
82
LCD CONTROLLER
REGISTER
82a
16
FIRST LCD
18
SECOND LCD
80
SECOND VRAM
76
SECOND GPU
32
INWARD CAMERA
34
OUTWARD CAMERA
22
TOUCH PANEL
I/F CIRCUIT
72
84
MICROPHONE
86
AMPLIFIER

FIG. 4



(A) MAIN MANU SCREEN 200

(B) ITEM PURCHASING SCREEN 300

(C) COURSE SELECTING SCREEN 400

FIG. 5

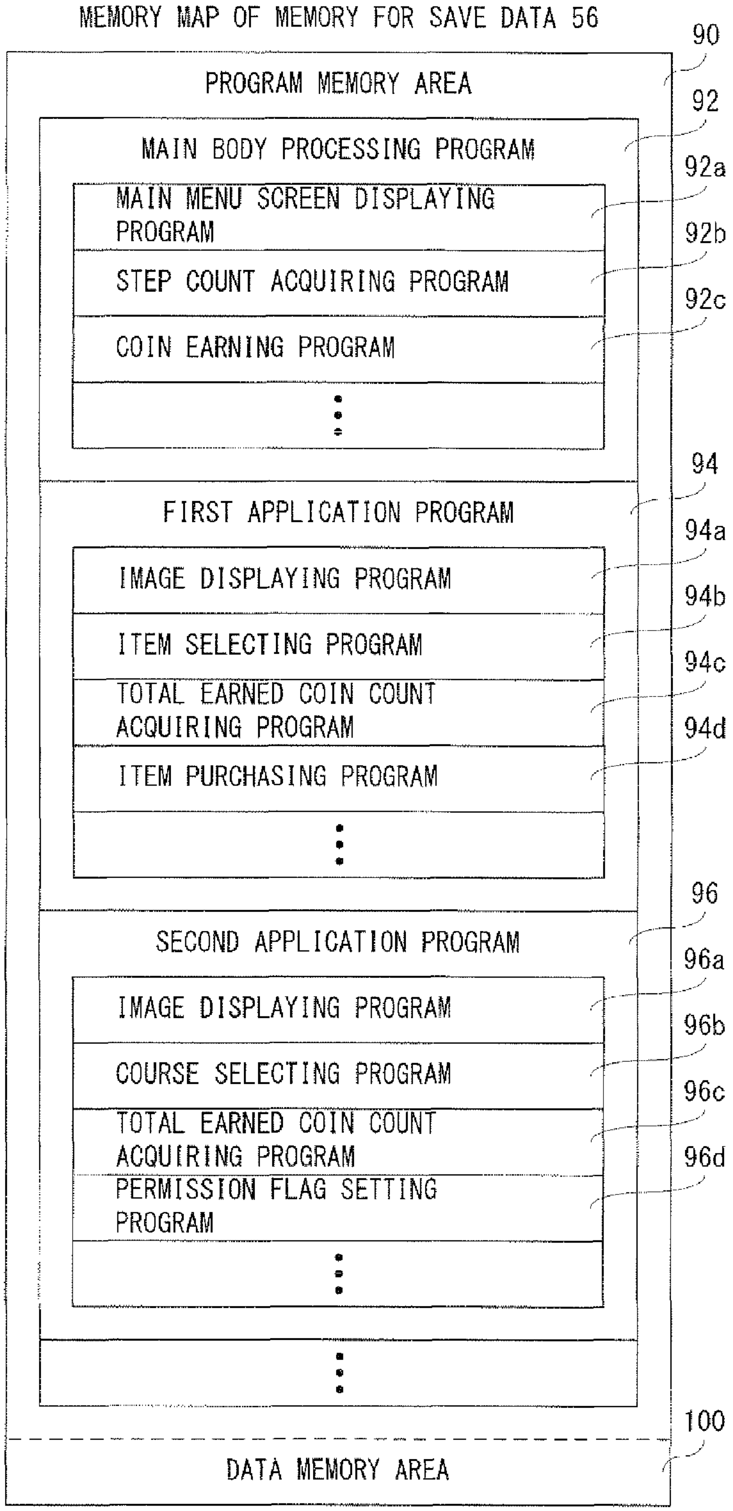

MEMORY MAP OF MEMORY FOR SAVE DATA 56
90
PROGRAM MEMORY AREA
92
MAIN BODY PROCESSING PROGRAM
92a
MAIN MENU SCREEN DISPLAYING PROGRAM
92b
STEP COUNT ACQUIRING PROGRAM
92c
COIN EARNING PROGRAM
94
FIRST APPLICATION PROGRAM
94a
IMAGE DISPLAYING PROGRAM
94b
ITEM SELECTING PROGRAM
94c
TOTAL EARNED COIN COUNT ACQUIRING PROGRAM
94d
ITEM PURCHASING PROGRAM
96
SECOND APPLICATION PROGRAM
96a
IMAGE DISPLAYING PROGRAM
96b
COURSE SELECTING PROGRAM
96c
TOTAL EARNED COIN COUNT ACQUIRING PROGRAM
96d
PERMISSION FLAG SETTING PROGRAM
100
DATA MEMORY AREA

FIG. 6

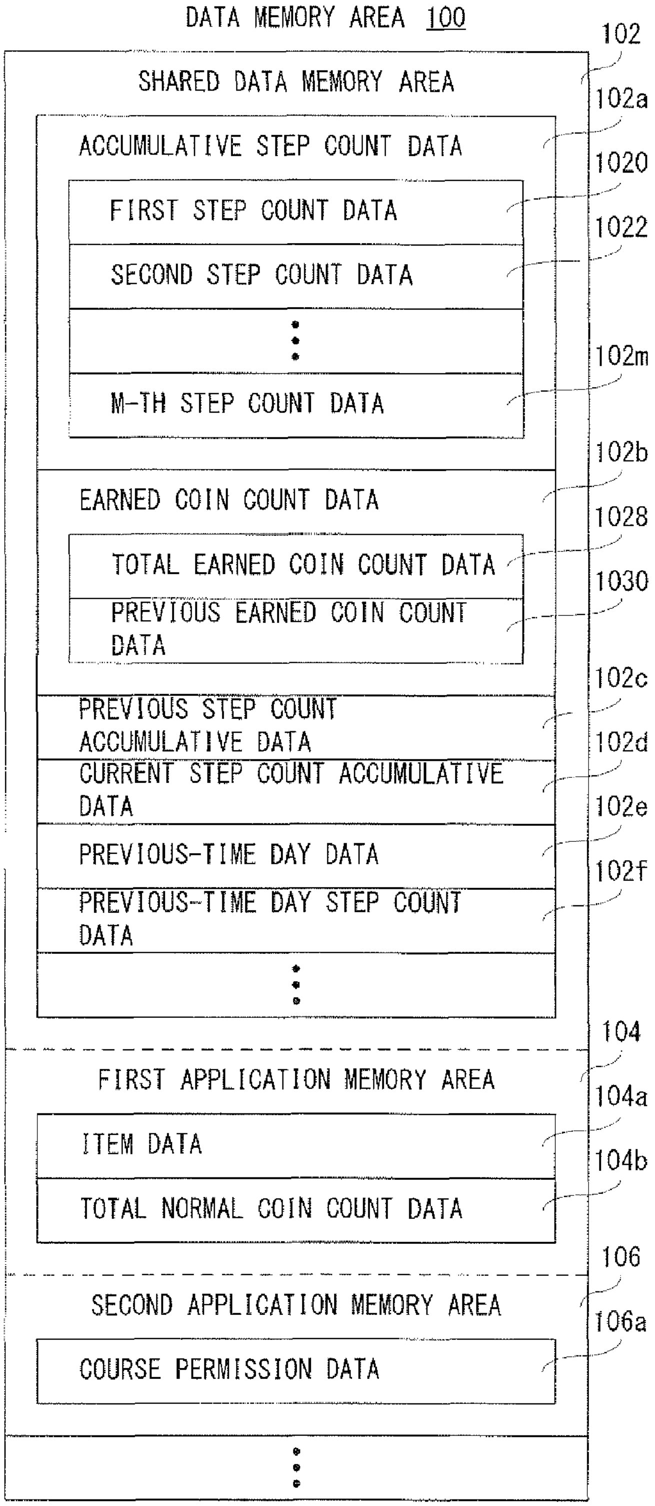

DATA MEMORY AREA 100
102
SHARED DATA MEMORY AREA
102a
ACCUMULATIVE STEP COUNT DATA
1020
FIRST STEP COUNT DATA
1022
SECOND STEP COUNT DATA
102m
M-TH STEP COUNT DATA
102b
EARNED COIN COUNT DATA
1028
TOTAL EARNED COIN COUNT DATA
1030
PREVIOUS EARNED COIN COUNT DATA
102c
PREVIOUS STEP COUNT ACCUMULATIVE DATA
102d
CURRENT STEP COUNT ACCUMULATIVE DATA
102e
PREVIOUS-TIME DAY DATA
102f
PREVIOUS-TIME DAY STEP COUNT DATA
104
FIRST APPLICATION MEMORY AREA
104a
ITEM DATA
104b
TOTAL NORMAL COIN COUNT DATA
106
SECOND APPLICATION MEMORY AREA
106a
COURSE PERMISSION DATA

FIG. 7

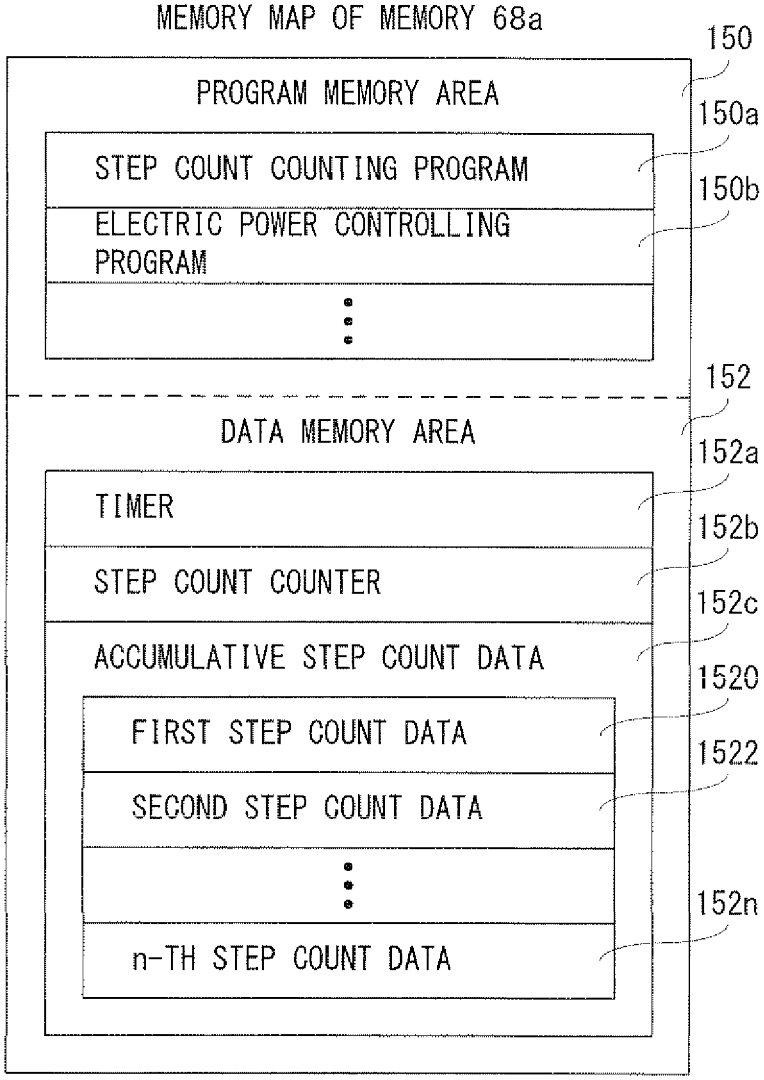

MEMORY MAP OF MEMORY 68a
150
PROGRAM MEMORY AREA
150a
STEP COUNT COUNTING PROGRAM
150b
ELECTRIC POWER CONTROLLING PROGRAM
152
DATA MEMORY AREA
152a
TIMER
152b
STEP COUNT COUNTER
152c
ACCUMULATIVE STEP COUNT DATA
1520
FIRST STEP COUNT DATA
1522
SECOND STEP COUNT DATA
152n
n-TH STEP COUNT DATA

FIG. 8

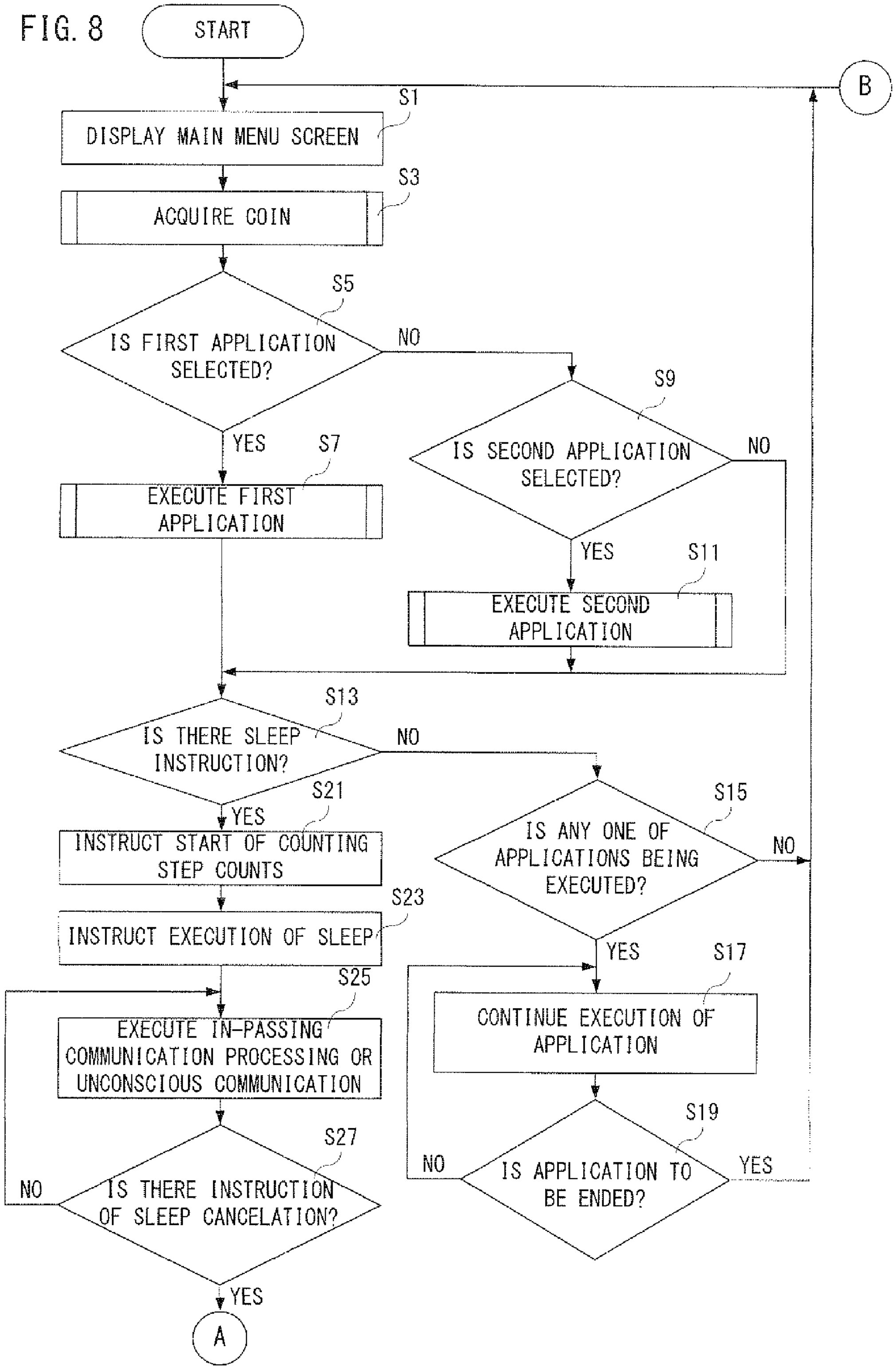

START
B
S1
DISPLAY MAIN MENU SCREEN
S3
ACQUIRE COIN
S5
IS FIRST APPLICATION SELECTED?
NO
YES
S7
EXECUTE FIRST APPLICATION
S9
IS SECOND APPLICATION SELECTED?
NO
YES
S11
EXECUTE SECOND APPLICATION
S13
IS THERE SLEEP INSTRUCTION?
NO
YES
S21
INSTRUCT START OF COUNTING STEP COUNTS
S23
INSTRUCT EXECUTION OF SLEEP
S25
EXECUTE IN-PASSING COMMUNICATION PROCESSING OR UNCONSCIOUS COMMUNICATION
S27
IS THERE INSTRUCTION OF SLEEP CANCELATION?
NO
YES
A
S15
IS ANY ONE OF APPLICATIONS BEING EXECUTED?
NO
YES
S17
CONTINUE EXECUTION OF APPLICATION
S19
IS APPLICATION TO BE ENDED?
NO
YES

FIG. 9

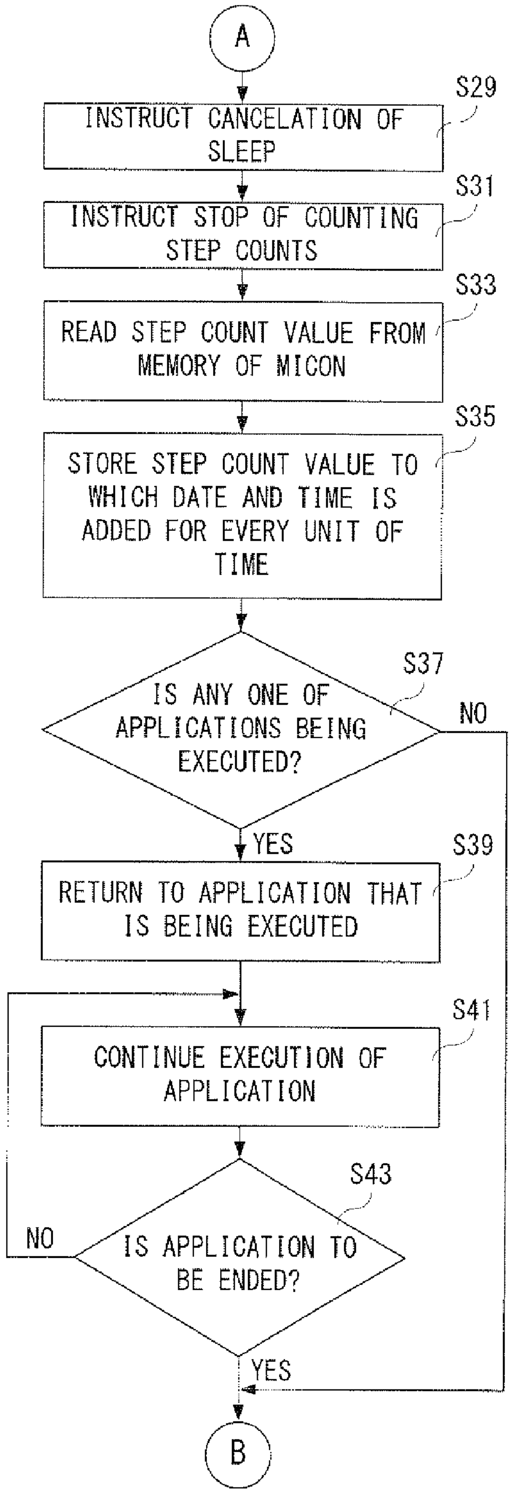

A
S29
INSTRUCT CANCELATION OF SLEEP
S31
INSTRUCT STOP OF COUNTING STEP COUNTS
S33
READ STEP COUNT VALUE FROM MEMORY OF MICON
S35
STORE STEP COUNT VALUE TO WHICH DATE AND TIME IS ADDED FOR EVERY UNIT OF TIME
S37
IS ANY ONE OF APPLICATIONS BEING EXECUTED?
NO
YES
S39
RETURN TO APPLICATION THAT IS BEING EXECUTED
S41
CONTINUE EXECUTION OF APPLICATION
S43
IS APPLICATION TO BE ENDED?
NO
YES
B

FIG. 10

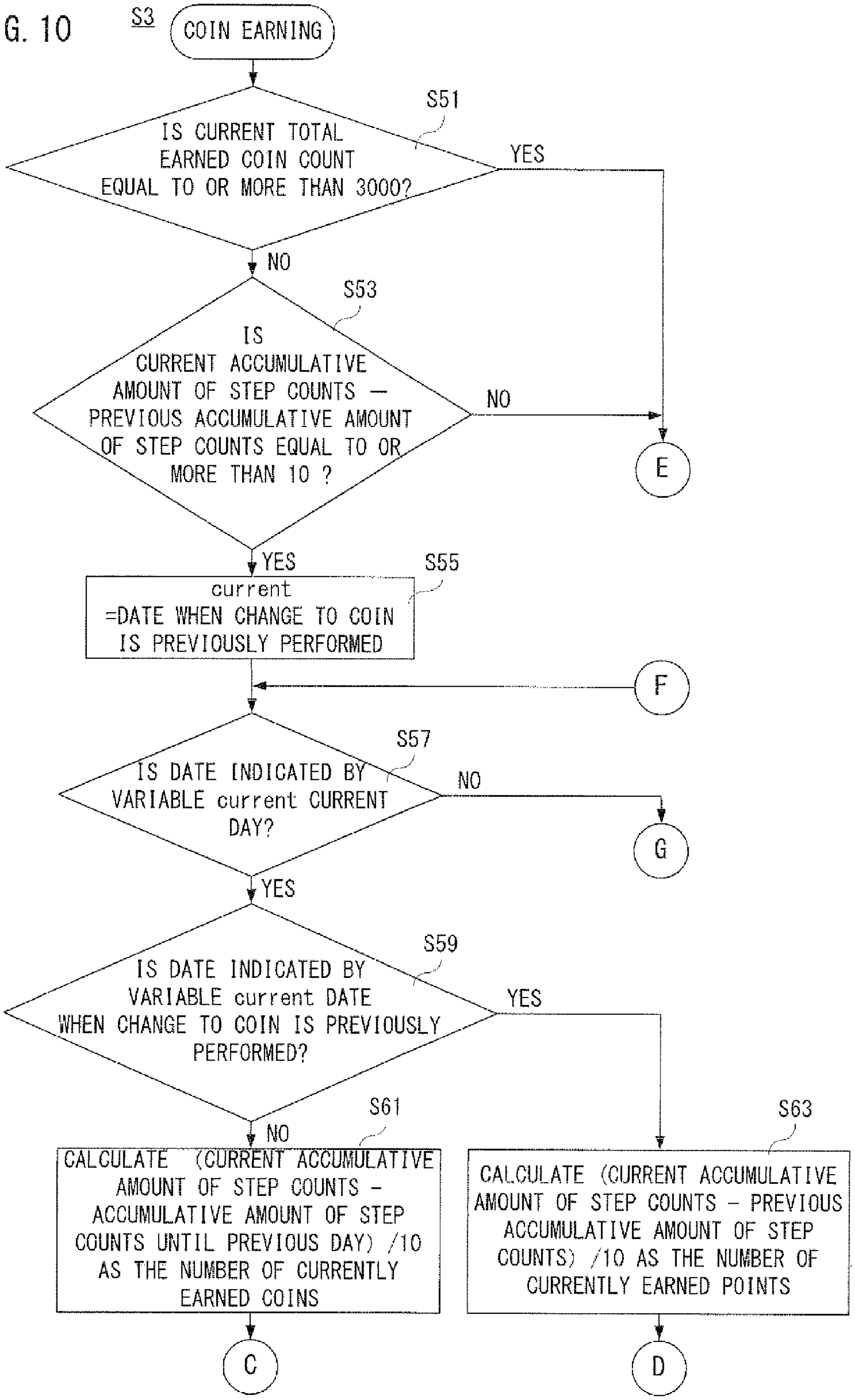

S3
COIN EARNING
S51
IS CURRENT TOTAL EARNED COIN COUNT EQUAL TO OR MORE THAN 3000?
YES
NO
S53
IS CURRENT ACCUMULATIVE AMOUNT OF STEP COUNTS − PREVIOUS ACCUMULATIVE AMOUNT OF STEP COUNTS EQUAL TO OR MORE THAN 10 ?
NO
E
YES
S55
current =DATE WHEN CHANGE TO COIN IS PREVIOUSLY PERFORMED
F
S57
IS DATE INDICATED BY VARIABLE current CURRENT DAY?
NO
G
YES
S59
IS DATE INDICATED BY VARIABLE current DATE WHEN CHANGE TO COIN IS PREVIOUSLY PERFORMED?
YES
NO
S61
CALCULATE (CURRENT ACCUMULATIVE AMOUNT OF STEP COUNTS - ACCUMULATIVE AMOUNT OF STEP COUNTS UNTIL PREVIOUS DAY) /10 AS THE NUMBER OF CURRENTLY EARNED COINS
S63
CALCULATE (CURRENT ACCUMULATIVE AMOUNT OF STEP COUNTS - PREVIOUS ACCUMULATIVE AMOUNT OF STEP COUNTS) /10 AS THE NUMBER OF CURRENTLY EARNED POINTS
C
D

FIG. 11

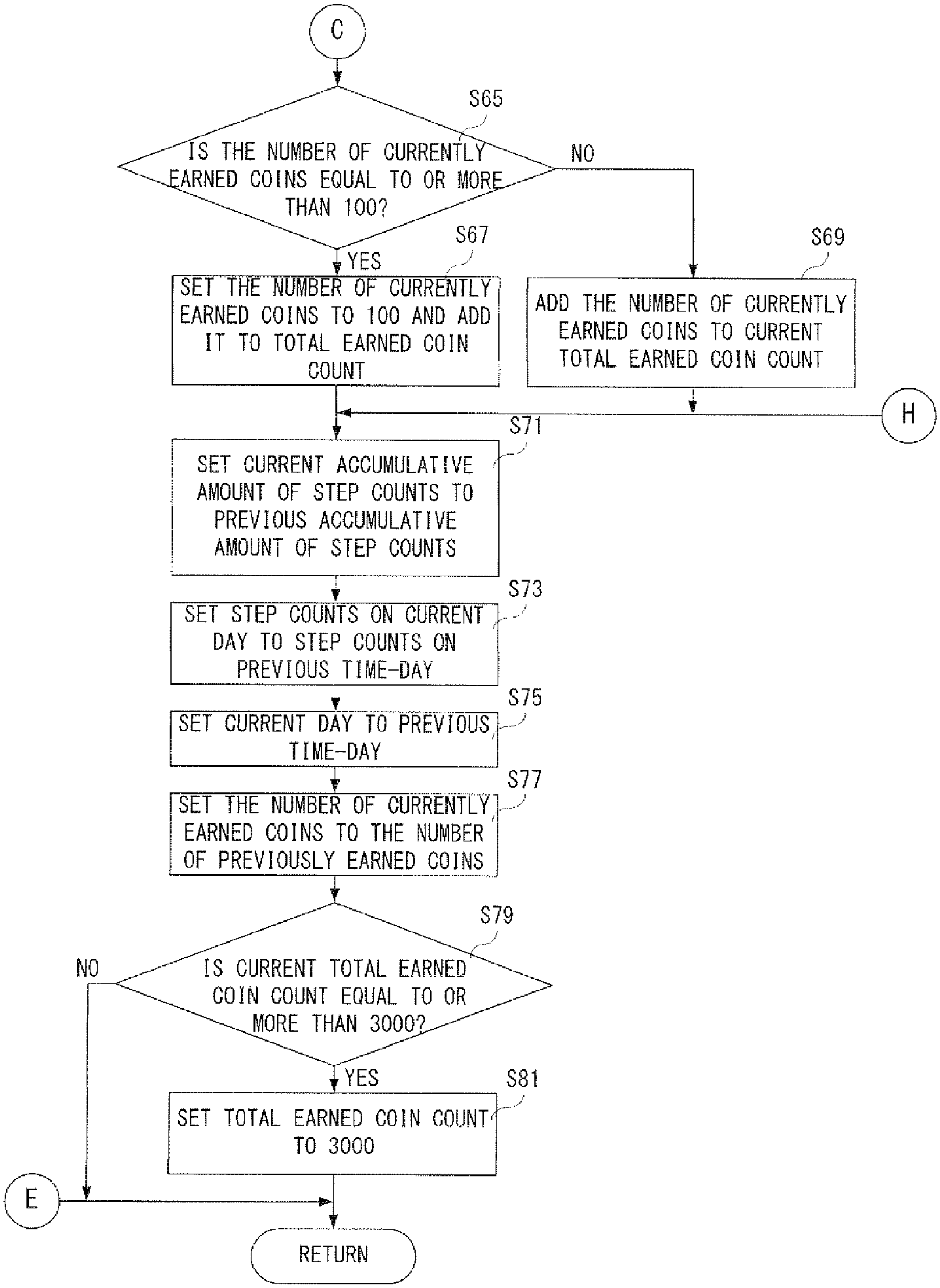

C
S65
IS THE NUMBER OF CURRENTLY EARNED COINS EQUAL TO OR MORE THAN 100?
NO
YES
S67
SET THE NUMBER OF CURRENTLY EARNED COINS TO 100 AND ADD IT TO TOTAL EARNED COIN COUNT
S69
ADD THE NUMBER OF CURRENTLY EARNED COINS TO CURRENT TOTAL EARNED COIN COUNT
H
S71
SET CURRENT ACCUMULATIVE AMOUNT OF STEP COUNTS TO PREVIOUS ACCUMULATIVE AMOUNT OF STEP COUNTS
S73
SET STEP COUNTS ON CURRENT DAY TO STEP COUNTS ON PREVIOUS TIME-DAY
S75
SET CURRENT DAY TO PREVIOUS TIME-DAY
S77
SET THE NUMBER OF CURRENTLY EARNED COINS TO THE NUMBER OF PREVIOUSLY EARNED COINS
S79
NO
IS CURRENT TOTAL EARNED COIN COUNT EQUAL TO OR MORE THAN 3000?
YES
S81
SET TOTAL EARNED COIN COUNT TO 3000
E
RETURN

FIG. 12

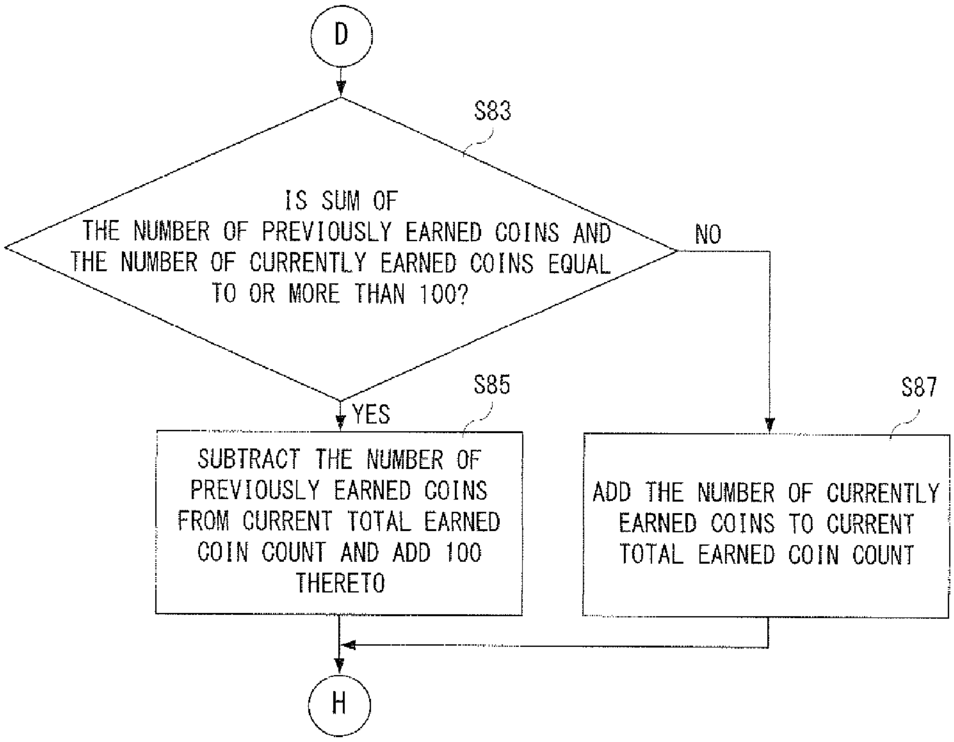

D
S83
IS SUM OF THE NUMBER OF PREVIOUSLY EARNED COINS AND THE NUMBER OF CURRENTLY EARNED COINS EQUAL TO OR MORE THAN 100?
NO
YES
S85
SUBTRACT THE NUMBER OF PREVIOUSLY EARNED COINS FROM CURRENT TOTAL EARNED COIN COUNT AND ADD 100 THERETO
S87
ADD THE NUMBER OF CURRENTLY EARNED COINS TO CURRENT TOTAL EARNED COIN COUNT
H

FIG. 13

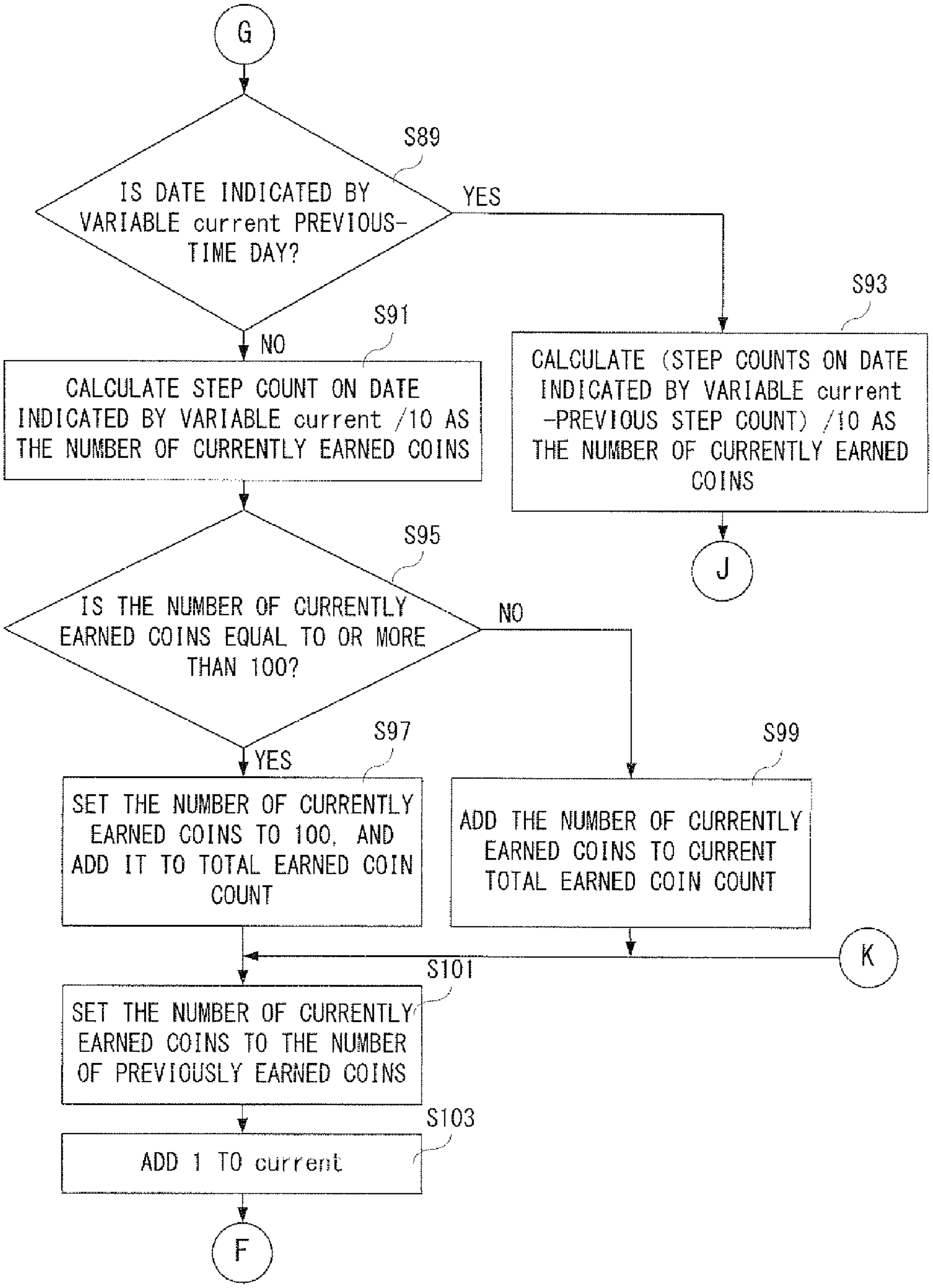

G
S89
IS DATE INDICATED BY VARIABLE current PREVIOUS-TIME DAY?
YES
NO
S91
CALCULATE STEP COUNT ON DATE INDICATED BY VARIABLE current /10 AS THE NUMBER OF CURRENTLY EARNED COINS
S93
CALCULATE (STEP COUNTS ON DATE INDICATED BY VARIABLE current -PREVIOUS STEP COUNT) /10 AS THE NUMBER OF CURRENTLY EARNED COINS
J
S95
IS THE NUMBER OF CURRENTLY EARNED COINS EQUAL TO OR MORE THAN 100?
NO
YES
S97
SET THE NUMBER OF CURRENTLY EARNED COINS TO 100, AND ADD IT TO TOTAL EARNED COIN COUNT
S99
ADD THE NUMBER OF CURRENTLY EARNED COINS TO CURRENT TOTAL EARNED COIN COUNT
K
S101
SET THE NUMBER OF CURRENTLY EARNED COINS TO THE NUMBER OF PREVIOUSLY EARNED COINS
S103
ADD 1 TO current
F

FIG. 14

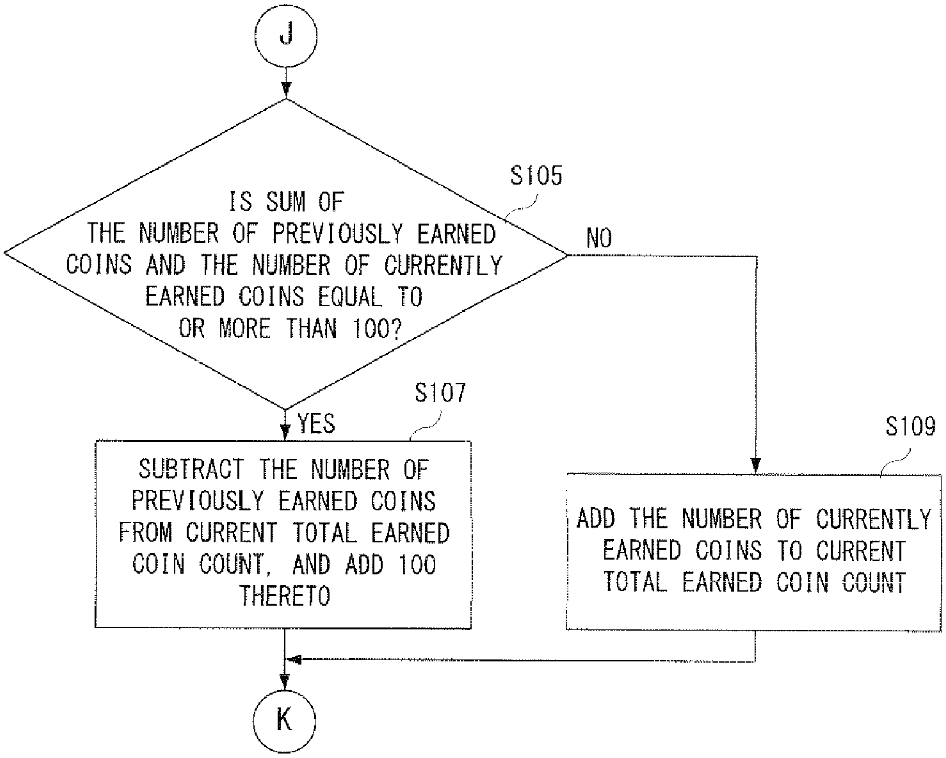

J
IS SUM OF THE NUMBER OF PREVIOUSLY EARNED COINS AND THE NUMBER OF CURRENTLY EARNED COINS EQUAL TO OR MORE THAN 100?
S105
NO
YES
S107
SUBTRACT THE NUMBER OF PREVIOUSLY EARNED COINS FROM CURRENT TOTAL EARNED COIN COUNT, AND ADD 100 THERETO
S109
ADD THE NUMBER OF CURRENTLY EARNED COINS TO CURRENT TOTAL EARNED COIN COUNT
K

FIG. 15

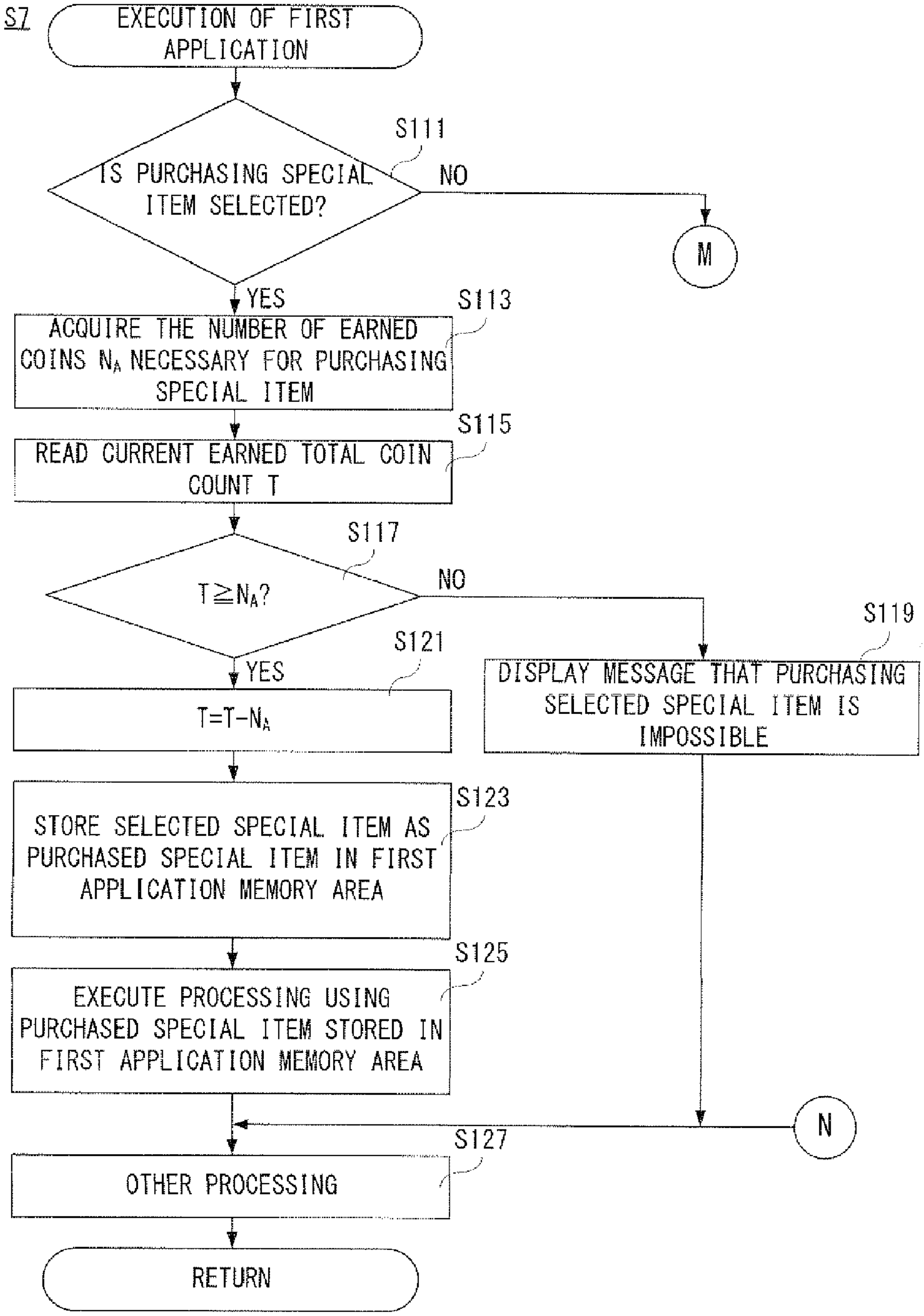

S7
EXECUTION OF FIRST APPLICATION
S111
IS PURCHASING SPECIAL ITEM SELECTED?
NO
M
YES
S113
ACQUIRE THE NUMBER OF EARNED COINS N_A NECESSARY FOR PURCHASING SPECIAL ITEM
S115
READ CURRENT EARNED TOTAL COIN COUNT T
S117
$T \geqq N_A$?
NO
S119
DISPLAY MESSAGE THAT PURCHASING SELECTED SPECIAL ITEM IS IMPOSSIBLE
YES
S121
$T=T-N_A$
S123
STORE SELECTED SPECIAL ITEM AS PURCHASED SPECIAL ITEM IN FIRST APPLICATION MEMORY AREA
S125
EXECUTE PROCESSING USING PURCHASED SPECIAL ITEM STORED IN FIRST APPLICATION MEMORY AREA
N
S127
OTHER PROCESSING
RETURN

FIG. 16

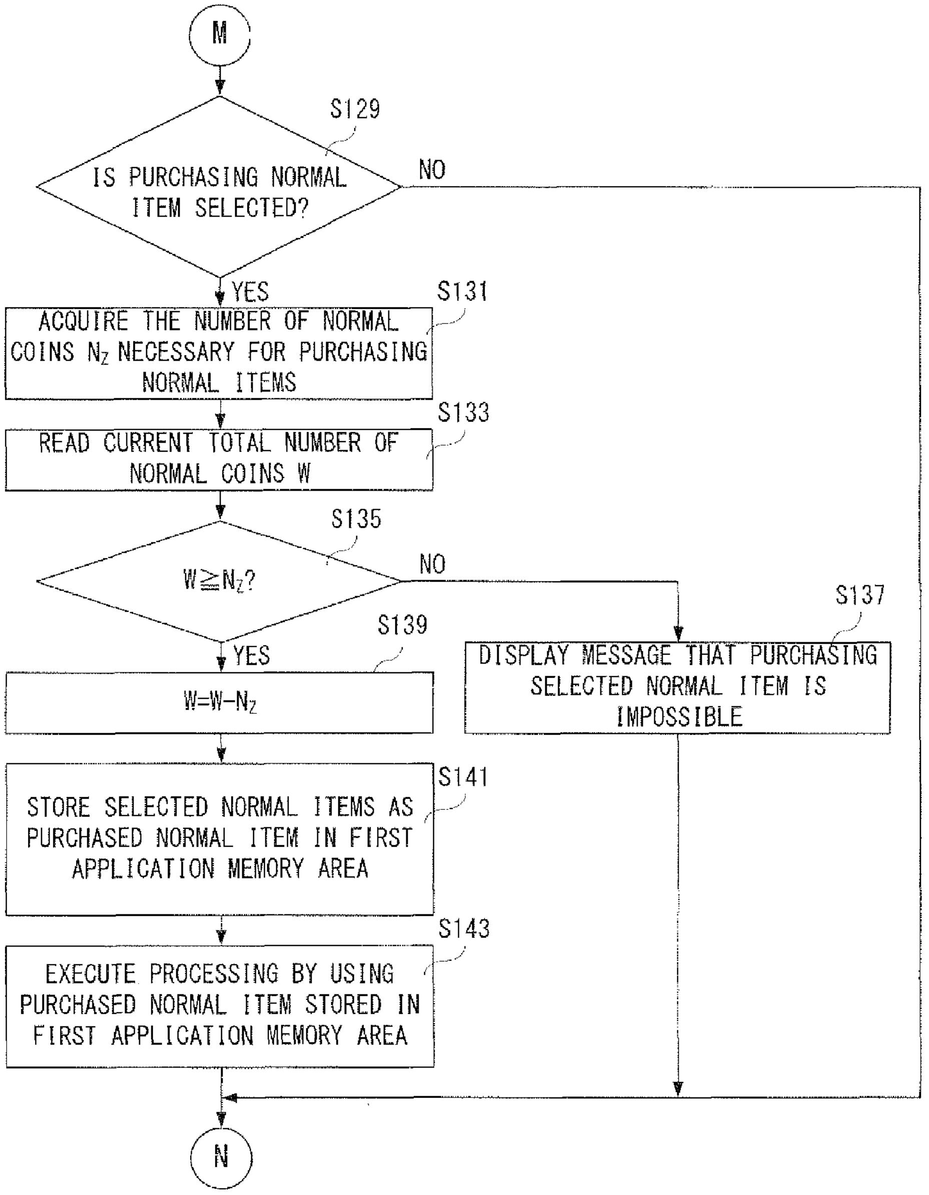

M
S129
IS PURCHASING NORMAL ITEM SELECTED?
NO
YES
S131
ACQUIRE THE NUMBER OF NORMAL COINS N_Z NECESSARY FOR PURCHASING NORMAL ITEMS
S133
READ CURRENT TOTAL NUMBER OF NORMAL COINS W
S135
$W \geqq N_Z$?
NO
S137
DISPLAY MESSAGE THAT PURCHASING SELECTED NORMAL ITEM IS IMPOSSIBLE
YES
S139
$W=W-N_Z$
S141
STORE SELECTED NORMAL ITEMS AS PURCHASED NORMAL ITEM IN FIRST APPLICATION MEMORY AREA
S143
EXECUTE PROCESSING BY USING PURCHASED NORMAL ITEM STORED IN FIRST APPLICATION MEMORY AREA
N

FIG. 17

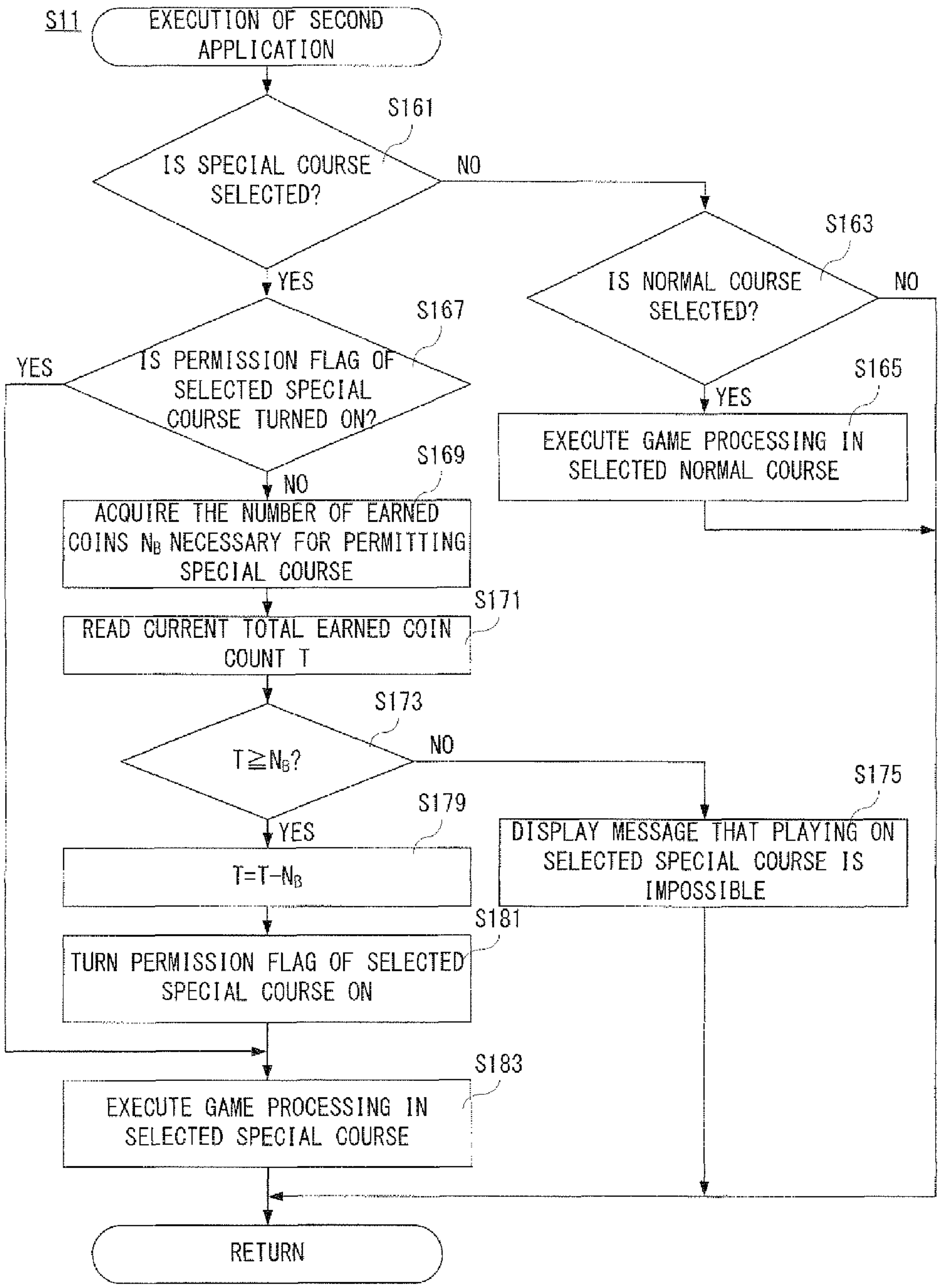

S11
EXECUTION OF SECOND APPLICATION
S161
IS SPECIAL COURSE SELECTED?
NO
YES
S163
IS NORMAL COURSE SELECTED?
NO
YES
S165
EXECUTE GAME PROCESSING IN SELECTED NORMAL COURSE
S167
IS PERMISSION FLAG OF SELECTED SPECIAL COURSE TURNED ON?
YES
NO
S169
ACQUIRE THE NUMBER OF EARNED COINS N_B NECESSARY FOR PERMITTING SPECIAL COURSE
S171
READ CURRENT TOTAL EARNED COIN COUNT T
S173
$T \geqq N_B$?
NO
YES
S175
DISPLAY MESSAGE THAT PLAYING ON SELECTED SPECIAL COURSE IS IMPOSSIBLE
S179
$T=T-N_B$
S181
TURN PERMISSION FLAG OF SELECTED SPECIAL COURSE ON
S183
EXECUTE GAME PROCESSING IN SELECTED SPECIAL COURSE
RETURN

FIG. 18

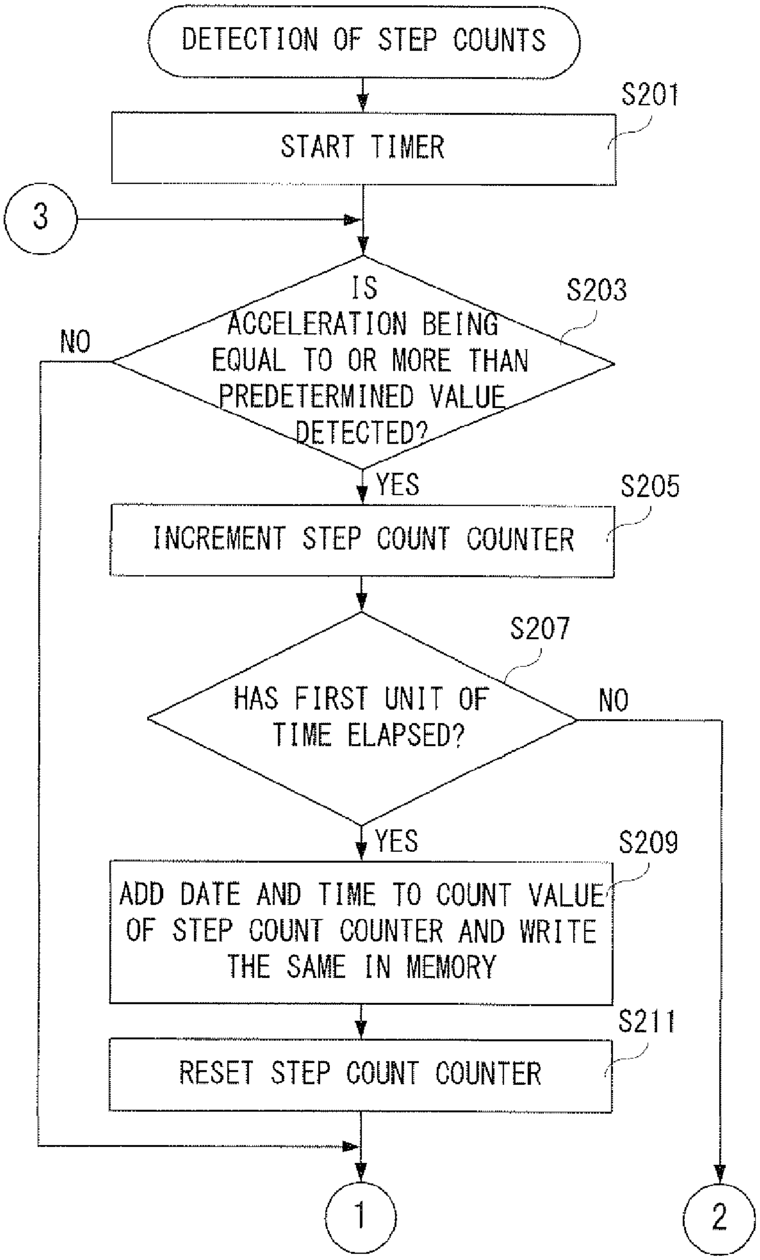

DETECTION OF STEP COUNTS
START TIMER
S201
3
IS ACCELERATION BEING EQUAL TO OR MORE THAN PREDETERMINED VALUE DETECTED?
S203
NO
YES
INCREMENT STEP COUNT COUNTER
S205
HAS FIRST UNIT OF TIME ELAPSED?
S207
NO
YES
ADD DATE AND TIME TO COUNT VALUE OF STEP COUNT COUNTER AND WRITE THE SAME IN MEMORY
S209
RESET STEP COUNT COUNTER
S211
1
2

FIG. 19

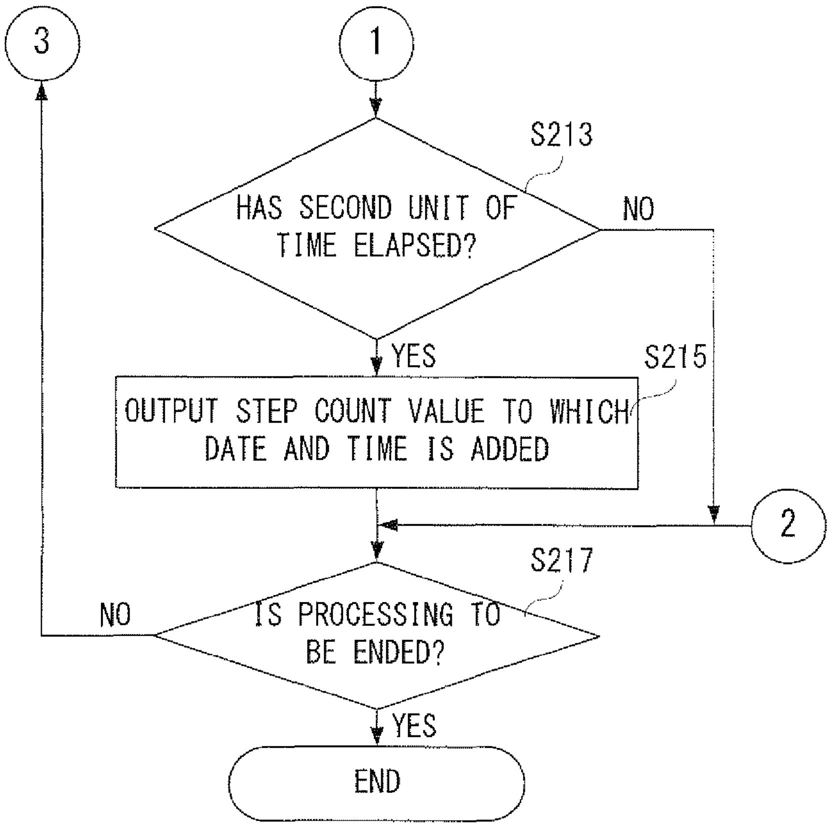
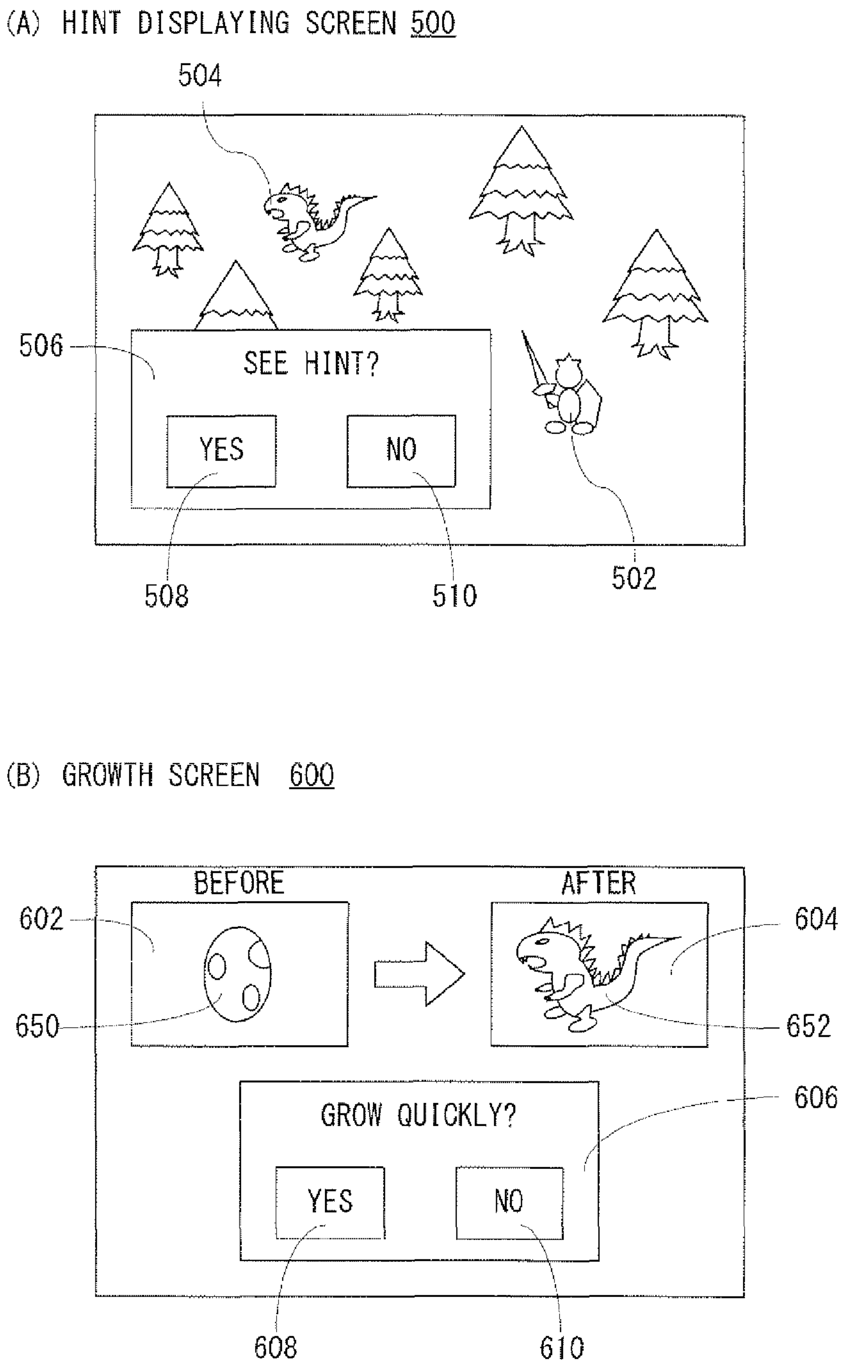

3
1
S213
HAS SECOND UNIT OF TIME ELAPSED?
NO
YES
S215
OUTPUT STEP COUNT VALUE TO WHICH DATE AND TIME IS ADDED
2
S217
NO
IS PROCESSING TO BE ENDED?
YES
END

FIG. 20



(A) HINT DISPLAYING SCREEN 500

(B) GROWTH SCREEN 600

FIG. 21

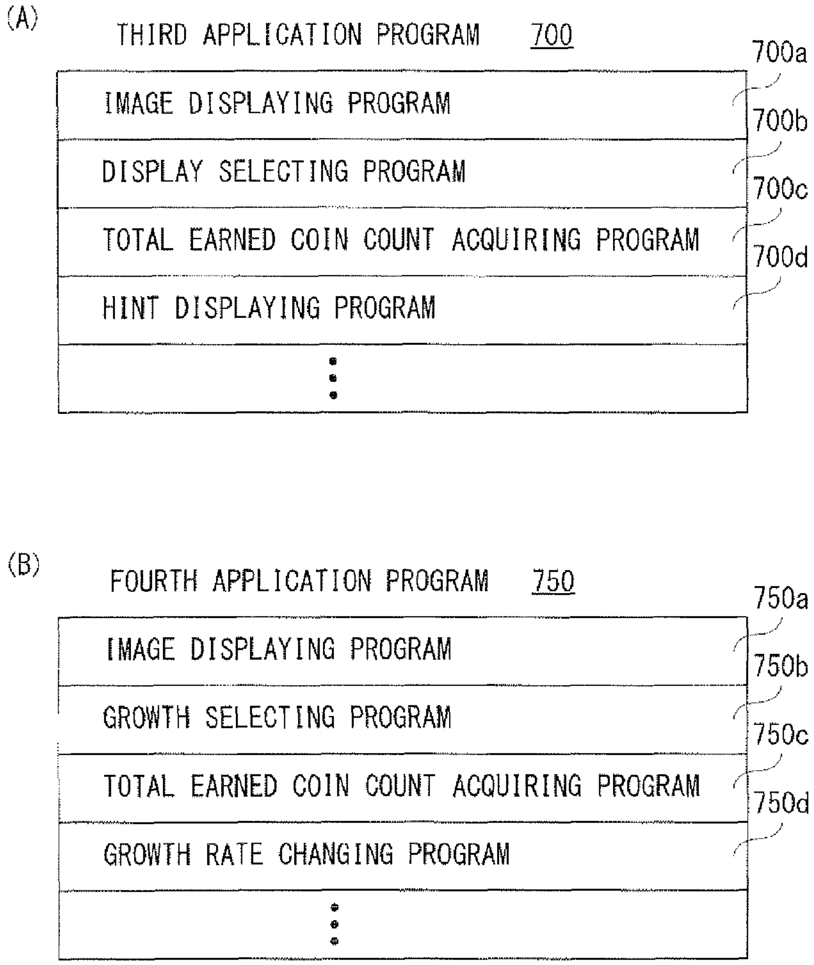

(A)
THIRD APPLICATION PROGRAM 700
700a
IMAGE DISPLAYING PROGRAM
700b
DISPLAY SELECTING PROGRAM
700c
TOTAL EARNED COIN COUNT ACQUIRING PROGRAM
700d
HINT DISPLAYING PROGRAM
⋮
(B)
FOURTH APPLICATION PROGRAM 750
750a
IMAGE DISPLAYING PROGRAM
750b
GROWTH SELECTING PROGRAM
750c
TOTAL EARNED COIN COUNT ACQUIRING PROGRAM
750d
GROWTH RATE CHANGING PROGRAM
⋮

FIG. 22

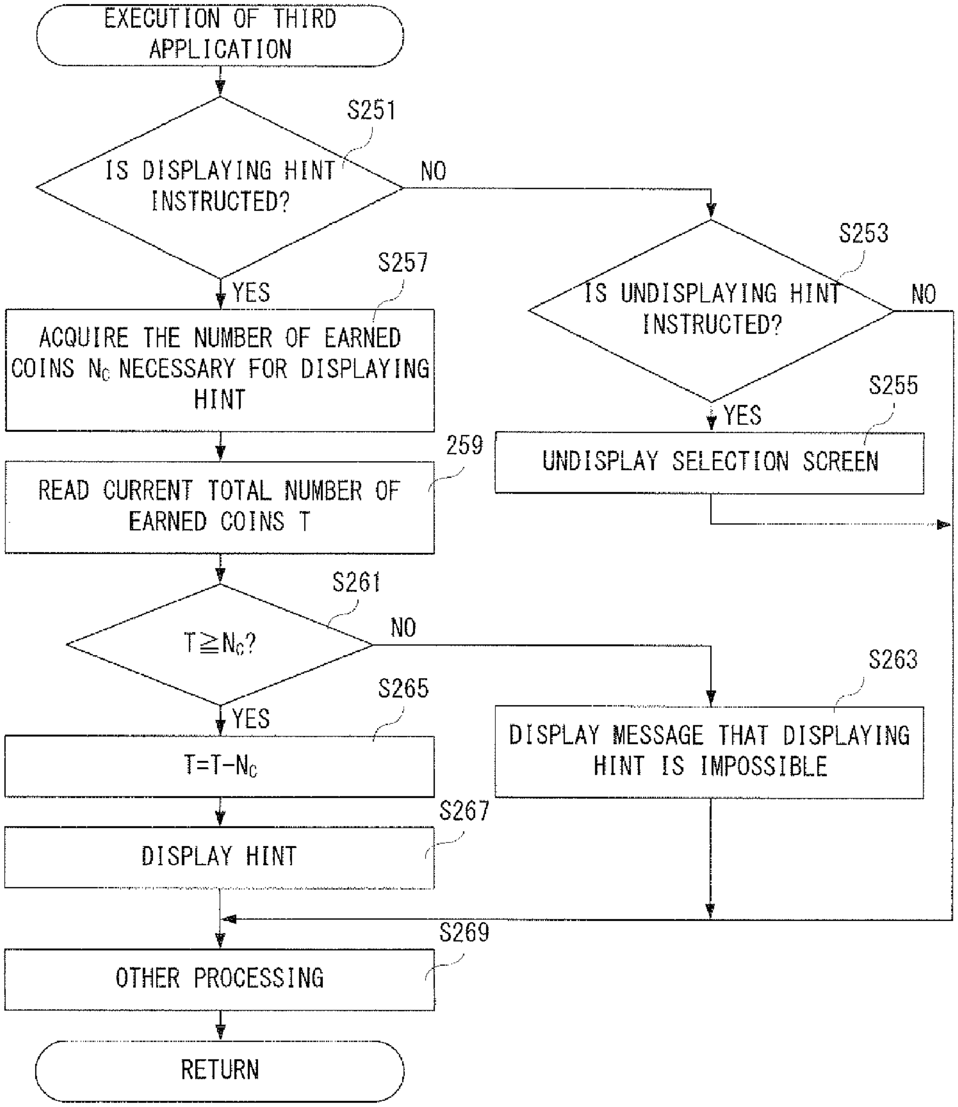

EXECUTION OF THIRD APPLICATION
S251
IS DISPLAYING HINT INSTRUCTED?
NO
YES
S253
IS UNDISPLAYING HINT INSTRUCTED?
NO
YES
S255
UNDISPLAY SELECTION SCREEN
S257
ACQUIRE THE NUMBER OF EARNED COINS N_C NECESSARY FOR DISPLAYING HINT
259
READ CURRENT TOTAL NUMBER OF EARNED COINS T
S261
T≧N_C?
NO
YES
S263
DISPLAY MESSAGE THAT DISPLAYING HINT IS IMPOSSIBLE
S265
T=T−N_C
S267
DISPLAY HINT
S269
OTHER PROCESSING
RETURN

FIG. 23

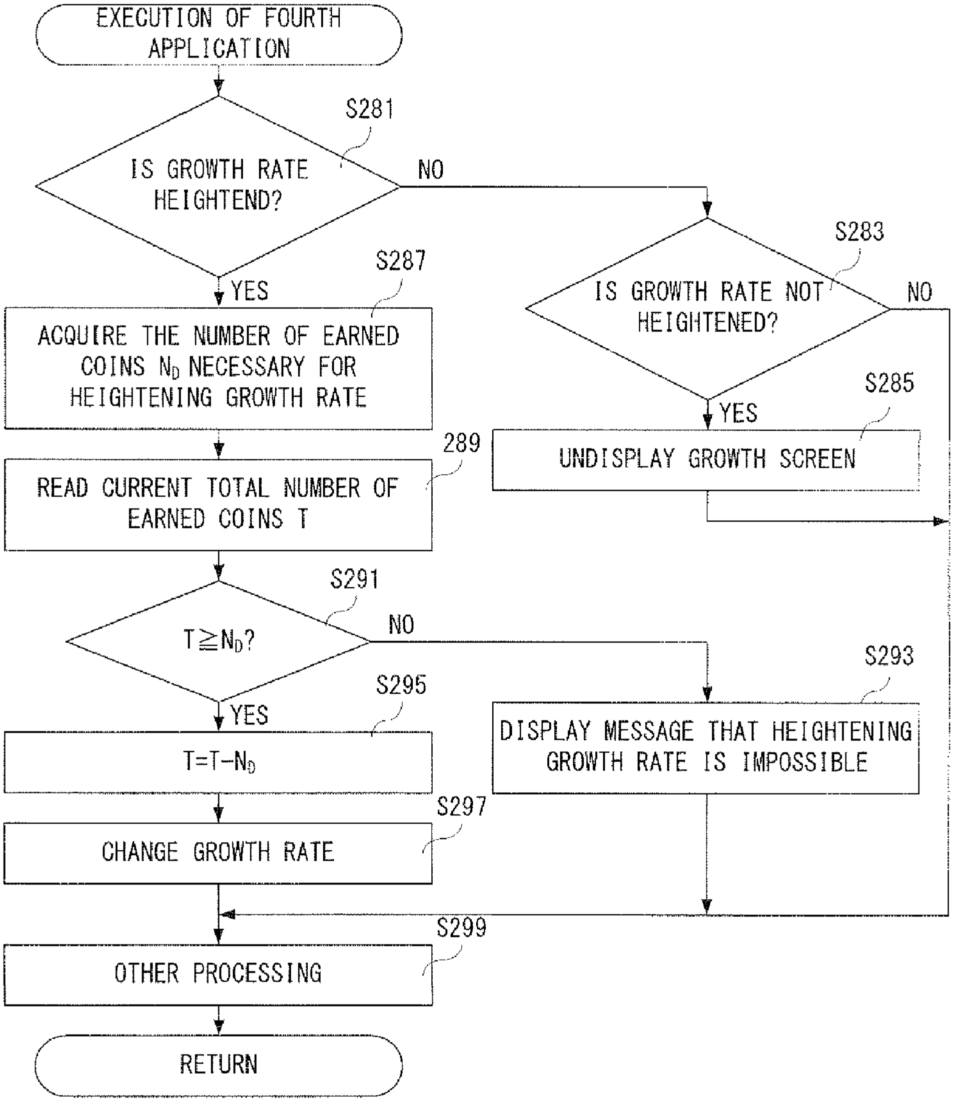

EXECUTION OF FOURTH APPLICATION
S281
IS GROWTH RATE HEIGHTEND?
NO
YES
S283
IS GROWTH RATE NOT HEIGHTENED?
NO
YES
S287
ACQUIRE THE NUMBER OF EARNED COINS N_D NECESSARY FOR HEIGHTENING GROWTH RATE
S285
UNDISPLAY GROWTH SCREEN
289
READ CURRENT TOTAL NUMBER OF EARNED COINS T
S291
$T \geqq N_D$?
NO
YES
S293
DISPLAY MESSAGE THAT HEIGHTENING GROWTH RATE IS IMPOSSIBLE
S295
$T=T-N_D$
S297
CHANGE GROWTH RATE
S299
OTHER PROCESSING
RETURN

FIG. 24

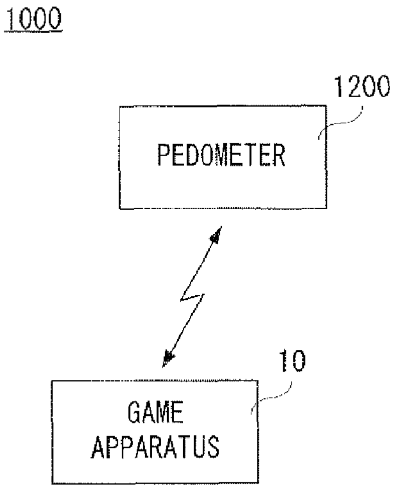

1000
1200
PEDOMETER
10
GAME APPARATUS

FIG. 25

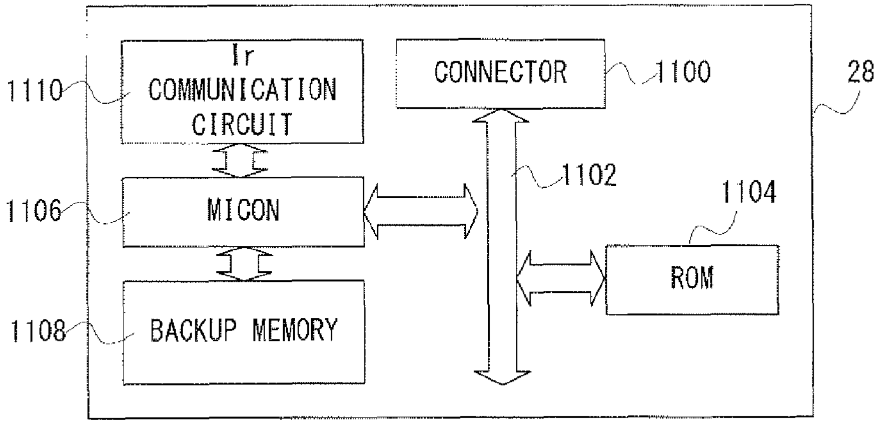

1110
Ir COMMUNICATION CIRCUIT
CONNECTOR
1100
28
1106
MICON
1102
1104
ROM
1108
BACKUP MEMORY

FIG. 26

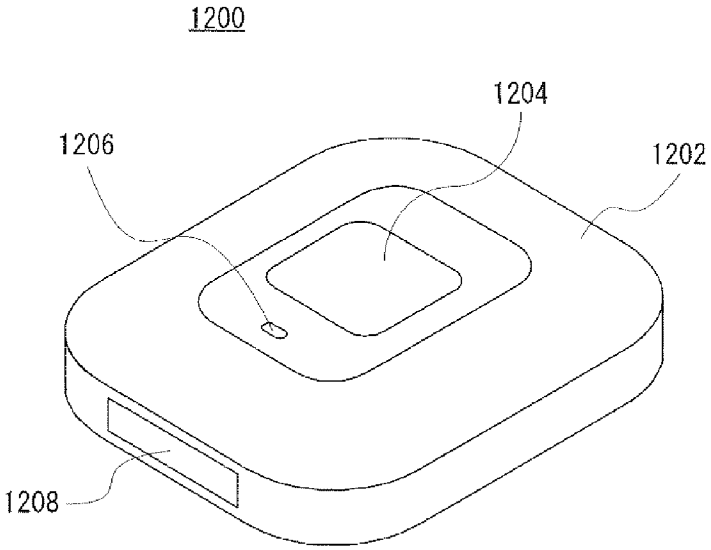
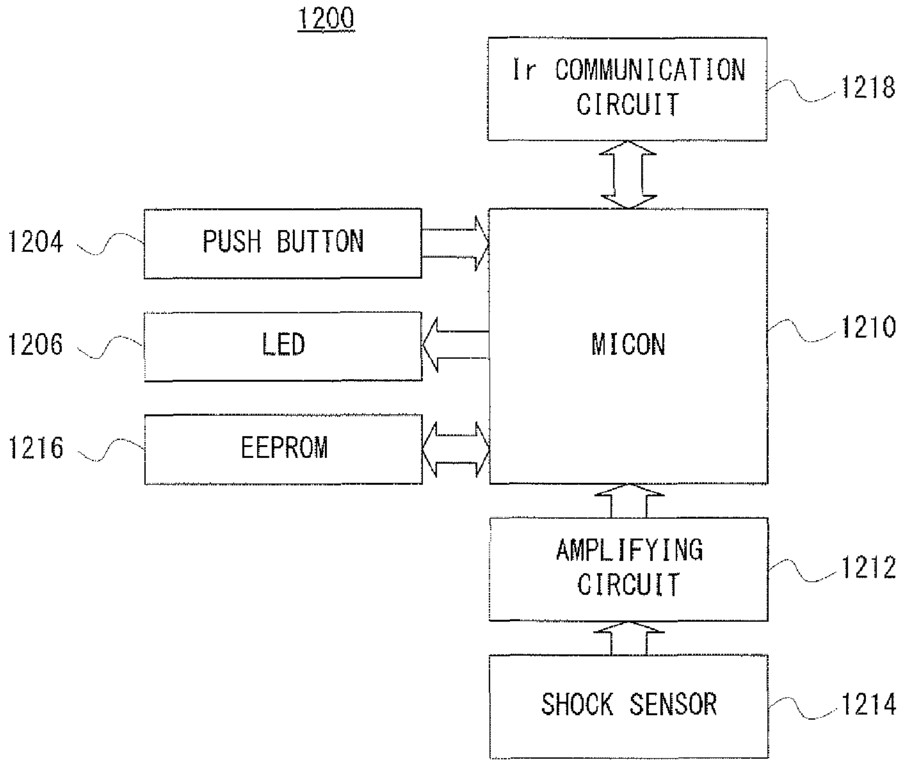


FIG. 27


1200
Ir COMMUNICATION CIRCUIT
1218
1204
PUSH BUTTON
1206
LED
MICON
1210
1216
EEPROM
AMPLIFYING CIRCUIT
1212
SHOCK SENSOR
1214

GAME APPARATUS, STORAGE MEDIUM, GAME CONTROLLING METHOD AND GAME SYSTEM USING STEP COUNT DATA

CROSS REFERENCE OF RELATED APPLICATION

The disclosure of Japanese Patent Application No. 2011-36681 filed on Feb. 23, 2011 is incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a game apparatus, a storage medium, a game controlling method and a game system. More specifically, the present invention relates to a game apparatus, a storage medium, a game controlling method and a game system which advance a game according to an operation by a player.

2. Description of the Related Art

One example of a related art is disclosed in Japanese Patent Application Laying-Open No. 2003-316905 [G06F 17/60] (document 1) laid-open on Nov. 7, 2003. In a point system according to the document 1, step counts are converted into points, and depending on the number of points, a desired service can be selected from a plurality of services. More specifically, the user walks with an electric pedometer to thereby measure step counts, and when the electric pedometer is connected to a cellular phone, the measured step counts are transmitted to a WEB server from which points are given. The points thus given are accumulated, and the accumulated points are used for a discount for the fee of athletic club, a discount of costs for shopping and eating and drinking at the club, a discount of a specific site of the Internet, and a discount at general store.

Furthermore, another example of the related art is disclosed in Japanese Patent Application Laying-Open No. 2009-254539 [A63F 13/00] (document 2) laid-open on Nov. 5, 2009. In the game system of the document 2, by transmitting a plurality of step count data measured by a plurality of pedometers are transmitted to game apparatuses by wireless communications, various games by using the plurality of step count data can be executed among the game apparatuses. For example, a game whose content changes depending on the number of players walking at the same time and a game whose content changes depending on the sum of the step counts by the plurality of players are disclosed.

However, in the point system of the document 1, points accumulated in response to the step counts measured by the pedometer are used for discount of the services, and are not to be utilized in the game.

Also, in the game system of the document 2, by using the step counts measured by the pedometer, various games are executed, but using the step counts in the game is a premise.

SUMMARY OF THE INVENTION

Therefore, it is a primary object of the present invention to provide a novel game apparatus, a novel storage medium, a novel game controlling method, and a novel game system.

Another object of the present invention is to provide a game apparatus, a storage medium, a game controlling method, and a game system capable of utilizing step counts for supporting advancement of a game.

A first invention is a game apparatus having an inputter, comprising a step count measurer, a game processor, and a utilizer. The step count measurer measures step counts. The game processor advances a game on the basis of an input from the inputter. The utilizer utilizes the step counts measured by the step count measurer in the game. The game processor executes processing of supporting advancement of the game when the step counts are utilized by the utilizer.

According to the first invention, by utilizing the step counts, the advancement of the game is supported, and thus, even a user who is had at games, for example, can easily advance the game by walking, capable of widening the range of users.

A second invention is according to the first invention, wherein the utilizer utilizes the step counts in the game on the basis of an input from the inputter. The game processor executes game processing for advancing the game on the basis of an input from the inputter when the step counts are not utilized by the utilizer, and executes support processing for supporting advancement of the game in addition to the game processing when the step counts are utilized by the utilizer.

According to the second invention, even without utilizing the step counts, the game can be advanced, and by utilizing step counts, the support processing for supporting the advancement of the game can be performed, and therefore, it is possible for the user to select whether to utilize the step counts depending on the mastery of the game by the user. Accordingly, players from beginners to advanced players can enjoy playing the game without discrimination, capable of widening the range of users.

A third invention is according to the first invention, wherein the game processor outputs information being a hint for advancement of the game when the step counts are utilized by the utilizer. For example, a way and a clue to defeating of the enemy are presented, and a direction in which the player character should proceed is presented.

According to the third invention, by utilizing the step counts, a hint can be acquired, and therefore, even the game with a high difficulty level can easily be advanced by walking.

A fourth invention is according to the first invention, wherein the game processor executes processing of shortening a time required for advancing the game when the step counts are utilized by the utilizer. For example, the game is played in fast-forward. Accordingly, the growth rate of the character is heightened, and the time taken to raise the level is shortened.

According to the fourth invention, by utilizing the step counts, the game can be advanced fast, and therefore, it is possible to efficiently play the game by walking.

A fifth invention is according to the first invention, and the game apparatus further comprises an accumulator which converts the step counts measured by the step count measurer into a step count correlation value correlating with the step counts and accumulates the same. The utilizer utilizes the step count correlation value accumulated by the accumulator in the game.

According to the fifth invention, the step counts are converted into a step count correlation value, and the step count correlation value is accumulated, and therefore, it is possible to utilize the step counts thereafter for the purpose of supporting the advancement of the game.

A sixth invention is according to the fifth invention, wherein the utilizer utilizes the step count correlation value in the game in a case that the step count correlation value is equal to or more than a predetermined value, and further comprising: a subtracter which performs a subtraction on the step count correlation value when the step count correlation value is utilized by the utilizer in the game.

According to the sixth invention, in a case that the step count correlation value is equal to or more than the predetermined value, the step count correlation value can be utilized in the game, and therefore, unless the user walks a predetermined distance or longer, the support for advancing the game cannot be acquired, and therefore, it is possible to motivate the user to walk. Also, every time that the advancement of the game is performed, the step count correlation value is reduced, and therefore, it is possible to motivate the user to continuously walk.

A seventh invention is according to the first invention, further comprising: a switcher which switches between an unused state and a used state of the game apparatus, and a switch determiner which determines whether or not the used state switches to the unused state. The step count measurer measures step counts when a shift to the unused state is determined by the switch determiner. That is, when the game apparatus is not in use, the step counts are measured.

According to the seventh invention, when the user or the player does not use the equipment, it can be used as a pedometer. Accordingly, even if the equipment is not in use, a motivation to carry it outside is given to the user.

An eighth invention is according to the seventh invention, wherein the switcher switches between a power saving mode and a normal mode. The switch determiner determines whether or not the used state shifts to the unused state by determining whether or not the normal mode shifts to the power saving mode.

In the eighth invention as well, when the user or the player does not use the equipment, it can be used as a pedometer.

A ninth invention is according to the seventh invention, further comprising a disabler which disables the game processor. The switcher switches from the used state to the unused state when the game processor is disabled by the disabler.

In the ninth invention as well, when the user or the player does not use the equipment, it can be used as a pedometer.

A tenth invention is according to the seventh invention, wherein a game apparatus body has an openable and closeable mechanism. For example, the cover of the apparatus is opened or closed, or the apparatus itself is opened and closed. The switcher switches between a closed state and an opened state of the game apparatus body. The switch determiner determines whether or not the used state shifts to the unused state by determining whether or not the game apparatus body shifts from the opened state to the closed state.

In the tenth invention as well, when the user or the player does not use the equipment, it can be used as a pedometer.

An eleventh invention is according to the first invention, further comprising: a communicator. The communicator automatically executes communication processing while step counts are measured by the step count measurer.

According to the eleventh invention, when the user or the player does not use the equipment, communication processing, such as transmission and reception of data, and transmission or reception of data is further automatically executed, it is possible to collect data from other apparatuses and access points, and transmit data to other apparatuses and access points. Also, since communication processing is automatically performed while step counts are measured, communications can be made with equipment carried by other users and players and access points set throughout the city without the user or the player knowing it while the user or the player carries the equipment outside. Accordingly, it is possible to give surprise and interest to the user and inspire the user to walk.

A twelfth invention is according to the eleventh invention, wherein the communicator automatically makes a search for another game apparatus, and automatically transmits and receives data with the other game apparatus when it is searched.

In the twelfth invention as well, similar to the eleventh invention, while the user or the player carries the equipment outside, communications with equipment carried by other users or players are made without he or she knowing it, and therefore, it is possible to give surprise and interest to the user and inspire the user to walk.

A thirteenth invention is according to the eleventh invention, wherein the communicator automatically makes a search for a predetermined access point, and automatically transmits and receives data via the access point when it is searched.

In the thirteenth invention as well, similar to the eleventh invention, while the user or the player carries the equipment, communications are automatically made via access points set throughout the city without he or she knowing it, and therefore, it is possible to give surprise and interest to the user and inspire the user to walk.

A fourteenth invention is a game apparatus having an inputter, comprising a step count acquirer, a game processor, and a utilizer. The step count acquirer acquires step counts. For example, the game apparatus acquires step counts measured by a pedometer separately provided. The game processor advances a game on the basis of an input from the inputter. The utilizer utilizes the step counts acquired by the step count acquirer in the game. The game processor executes processing of supporting advancement of the game when the step counts are utilized by the utilizer.

A fifteenth invention is a storage medium storing a game program of a game apparatus having an inputter, wherein the game program causes the computer of the game apparatus to function as a step count measurer, a game processor, and a utilizer. The step count measurer measures step counts. The game processor advances a game on the basis of an input from the inputter. The utilizer utilizes the step counts measured by the step count measurer in the game. The game processor executes processing of supporting advancement of the game when the step counts are utilized by the utilizer.

A sixteenth invention is a storage medium storing a game program of a game apparatus having an inputter, and the game program causes the computer of the game apparatus to function as a step count acquirer, a game processor, and a utilizer. The step count acquirer acquires steps counts. The game processor advances a game on the basis of an input from the inputter. The utilizer utilizes the step counts acquired by the step count acquirer in the game. The game processor executes processing of supporting advancement of the game when the step counts are utilized by the utilizer.

A seventeenth invention is a game controlling method of a game apparatus having an inputter, comprising steps of: (a) measuring step counts; (b) advancing a game on the basis of the input from the inputter; and (c) utilizing the step counts measured by the step (a) in the game, wherein the step (b) executes processing of supporting advancement of the game when the step counts are utilized by the step (c).

An eighteenth invention is game controlling method of a game apparatus having an inputter, comprising steps of: (a) acquiring step counts; (b) advancing a game on the basis of the input from the inputter; and (c) utilizing the step counts acquired by the step (a) in the game, wherein the step (b) executes processing of supporting advancement of the game when the step counts are utilized by the step (c).

A nineteenth invention is a game system having an inputter, comprising a step count measurer, a game processor, and a utilizer. The step count measurer measures step counts. The game processor advances a game on the basis of an input from the inputter. The utilizer utilizes the step counts measured by the step count measurer in the game. The game processor executes processing of supporting advancement of the game when the step counts are utilized by the utilizer.

A twentieth invention is a game system including a game apparatus having an inputter and a pedometer measuring step counts, and the game apparatus comprises a step count acquirer, a game processor, and a utilizer. The step count acquirer acquires steps counts. The game processor advances a game on the basis of an input from the inputter. The utilizer utilizes the step counts acquired by the step count acquirer in the game. The game processor executes processing of supporting advancement of the game when the step counts are utilized by the utilizer.

In the fourteenth or twentieth invention as well, similar to the first invention, it is possible to widen the range of users.

The above described objects and other objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of the present invention when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an illustrative view showing one embodiment of an external configuration of a game apparatus of this invention;

FIG. **2** is an illustrative view showing a top and a left side surface of the game apparatus in a folded state shown in FIG. **1**;

FIG. **3** is a block diagram showing an electric configuration of the game apparatus shown in FIG. **1** and FIG. **2**;

FIG. **4** is an illustrative view showing examples of screens to be displayed on a first LCD or a second LCD of the game apparatus shown in FIG. **1**-FIG. **3**;

FIG. **5** is an illustrative view showing a memory map of a memory for saved data shown in FIG. **3**;

FIG. **6** is an illustrative view showing a detailed content of a data memory area shown in FIG. **5**;

FIG. **7** is an illustrative view showing a memory map of a memory integrated in a micon shown in FIG. **3**;

FIG. **8** is a flowchart showing a part of entire processing by a CPU shown in FIG. **3**;

FIG. **9** is a flowchart showing another part of the entire processing by the CPU shown in FIG. **3**, and being sequel to FIG. **8**;

FIG. **10** is a flowchart showing a part of coin earning processing by the CPU shown in FIG. **3**;

FIG. **11** is a flowchart showing a second part of the coin earning processing by the CPU shown in FIG. **3**, and being sequel to FIG. **10**;

FIG. **12** is a flowchart showing a third part of the coin earning processing by the CPU shown in FIG. **3**, and being sequel to FIG. **10**;

FIG. **13** is a flowchart showing a fourth part of the coin earning processing by the CPU shown in FIG. **3**, and being sequel to FIG. **10**;

FIG. **14** is a flowchart showing a fifth part of the coin earning processing by the CPU shown in FIG. **3**, and being sequel to FIG. **13**;

FIG. **15** is a flowchart showing a part of first application executing processing by the CPU shown in FIG. **3**;

FIG. **16** is a flowchart showing another part of the first application executing processing by the CPU shown in FIG. **3**;

FIG. **17** is a flowchart showing second application executing processing by the CPU shown in FIG. **3**;

FIG. **18** is a flowchart showing a part of step count detecting processing by a micon shown in FIG. **3**;

FIG. **19** is a flowchart showing another part of the step count detecting processing by the micon shown in FIG. **3** and being sequel to FIG. **18**;

FIG. **20** is an illustrative view showing another example of the screens to be displayed on the first LCD or the second LCD of the game apparatus shown in FIG. **1**-FIG. **3**;

FIG. **21** is an illustrative view showing another example of an application program stored in the data memory area of the main memory shown in FIG. **3**;

FIG. **22** is a flowchart showing third application executing processing by the CPU shown in FIG. **3**;

FIG. **23** is a flowchart showing fourth application executing processing by the CPU shown in FIG. **3**;

FIG. **24** is an illustrative view showing one example of a game system of the present invention;

FIG. **25** is an illustrative view showing an electric configuration of a memory card when the game system shown in FIG. **24** is configured;

FIG. **26** is a perspective view showing one example of an appearance of a pedometer shown in FIG. **24**; and

FIG. **27** is a block diagram showing an electric configuration of the pedometer shown in FIG. **24** and FIG. **26**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. **1**, a game apparatus **10** of an embodiment of the present invention includes an upper housing **12** and a lower housing **14**, and the upper housing **12** and the lower housing **14** are connected with each other so as to be opened or closed (foldable). In FIG. **1** example, the upper housing **12** and the lower housing **14** are constructed in the form of a horizontally long rectangular plate, and are rotatably connected with each other at the long sides of both of the housings. That is, the game apparatus **10** of this embodiment is a folding hand-held game apparatus, and in FIG. **1**, the game apparatus **10** is shown in an opened state (in an open state). The game apparatus **10** is constructed such a size that the user can hold with both hands or one hand even in the open state.

Generally, the user uses the game apparatus **10** in the open state. Furthermore, the user keeps the game apparatus **10** in a close state when not using the game apparatus **10**. Here, the game apparatus **10** can maintain an opening and closing angle formed between the upper housing **12** and the lower housing **14** at an arbitrary angle between the close state and open state by a friction force, etc. exerted at the connected portion as well as the aforementioned close state and open state. That is, the upper housing **12** can be fixed with respect to the lower housing **14** at the arbitrary angle.

Additionally, the game apparatus **10** is mounted with a camera (**32**, **34**) described later, functioning as an imaging device, such as imaging an image with the camera (**32**, **34**), displaying the imaged image on the screen, and saving the imaged image data.

As shown in FIG. **1**, the upper housing **12** is provided with a first LCD **16**, and the lower housing **14** is provided with a second LCD **18**. The first LCD **16** and the second LCD **18** take a horizontally-long shape, and are arranged such that the directions of the long sides thereof are coincident with the long sides of the upper housing **12** and the lower housing **14**.

For example, resolutions of the first LCD **16** and the second LCD **18** are set to 256 (horizontal)×192 (vertical) pixels (dots).

In addition, although an LCD is utilized as a display in this embodiment, an EL (Electronic Luminescence) display, a plasmatic display, etc. may be used in place of the LCD. Furthermore, the game apparatus **10** can utilize a display with an arbitrary resolution.

As shown in FIG. **1** and FIG. **2**, the lower housing **14** is provided with respective operation buttons **20*a***-**20*k*** as input devices. Out of the respective operation buttons **20*a***-**20*k***, the direction input button **20*a***, the operation button **20*b***, the operation button **20*c***, the operation button **20*d***, the operation button **20*e***, the power button **20*f***, the start button **20*g***, and the select button **20*h*** are provided on the surface (inward surface) to which the second LCD **18** of the lower housing **14** is set. More specifically, the direction input button **20*a*** and the power button **20*f*** are arranged at the left of the second LCD **18**, and the operation buttons **20*b***-**20*e***, **20*g*** and **20*h*** are arranged at the right of the second LCD **18**. Furthermore, when the upper housing **12** and the lower housing **14** are folded, the operation buttons **20*a***-**20*h*** are enclosed within the game apparatus **10**.

The direction input button (cross key) **20*a*** functions as a digital joystick, and is used for instructing a moving direction of a player object, moving a cursor, and so forth. Each operation buttons **20*b***-**20*e*** is a push button, and is used for causing the player object to make an arbitrary action, executing a decision and cancellation, and so forth. The power button **20*f*** is a push button, and is used for turning on or off the main power supply of the game apparatus **10**. The start button **20*g*** is a push button, and is used for suspending (pausing), starting (restarting) a game, and so forth. The select button **20*h*** is a push button, and is used for a game mode selection, a menu selection, etc.

Although operation buttons **20*i***-**20*k*** are omitted in FIG. **1**, as shown in FIG. **2** (A), the operation button (L button) **201** is provided at the left corner of the upper side surface of the lower housing **14**, and the operation button (R button) **20*j*** is provided at the right corner of the upper side surface of the lower housing **14**. Furthermore, as shown in FIG. **2** (B), the volume button **20*k*** is provided on the left side surface of the lower housing **14**.

FIG. **2** (A) is an illustrative view of the game apparatus **10** in a folded manner as seen from a top surface (upper housing **12**). FIG. **2** (B) is an illustrative view of the game apparatus **10** in a folded manner when seen from a left side surface.

The L button **20*i*** and the R button **20*j*** are push buttons, and can be used for similar operations to those of the operation buttons **20*b***-**20*e***, and can be used as subsidiary operations of these operation buttons **20*b***-**20*e***. Furthermore, in this embodiment, the L button **20*i*** and the R button **20*j*** can also be used for an operation of an imaging instruction (shutter operation). The volume button **20*k*** is made up of two push buttons, and is utilized for adjusting the volume of the sound output from two speakers (right speaker and left speaker) not shown. In this embodiment, the volume button **20*k*** is provided with an operating portion including two push portions, and the aforementioned push buttons are provided by being brought into correspondence with the respective push portions. Thus, when the one push portion is pushed, the volume is made high, and when the other push portion is pushed, the volume is made low. For example, when the push portion is hold down, the volume is gradually made high, or the volume is gradually made low.

Returning to FIG. **1**, the game apparatus **10** is further provided with a touch panel **22** as an input device separate from the operation buttons **20*a***-**20*k***. The touch panel **22** is attached so as to cover the screen of the second LCD **18**. In this embodiment, a touch panel of a resistance film system is used as the touch panel **22**, for example. However, the touch panel **22** can employ an arbitrary push-type touch panel without being restricted to the resistance film system. Furthermore, in this embodiment, as the touch panel **22**, a touch panel having the same resolution (detection accuracy) as the resolution of the second LCD **18**, for example, is utilized. However, the resolution of the touch panel **22** and the resolution of the second LCD **18** are not necessarily coincident with each other.

Additionally, at the right side surface of the lower housing **14**, a loading slot (represented by a dashed line shown in FIG. **1**) is provided. The loading slot can house a touch pen **24** to be utilized for performing an operation on the touch panel **22**. Generally, an input with respect to the touch panel **22** is performed with the touch pen **24**, but it may be performed with a finger of the user beyond the touch pen **24**. Accordingly, in a case that the touch pen **24** is not to be utilized, the loading slot and the housing portion for the touch pen **24** need not be provided.

Moreover, on the right side surface of the lower housing **14**, a loading slot for housing a memory card **26** (represented by a chain double-dashed line in FIG. **1**) is provided. Inside of the loading slot, a connector (not illustrated) for electrically connecting the game apparatus **10** and the memory card **26** is provided. The memory card **26** is an SD card, for example, and detachably attached to the connector. This memory card **26** is used for storing (saving) an image imaged by the game apparatus **10**, and reading the image generated (imaged) or stored by another apparatus in the game apparatus **10**.

In addition, on the upper side surface of the lower housing **14**, a loading slot (represented by an alternate long and short dash line FIG. **1**) for housing a memory card **28** is provided. Inside the loading slot as well, a connector (not illustrated) for electrically connecting the game apparatus **10** and the memory card **28** is provided. The memory card **28** is a recording medium of recording an information processing program, necessary data, etc. and is detachably attached to the loading slot provided to the lower housing **14**.

At the left end of the connected portion (hinge) between the upper housing **12** and the lower housing **14**, an indicator **30** is provided. The indicator **30** is made up of three LEDs **30*a***, **30*b***, **30*c***. Here, the game apparatus **10** can make a wireless communication with another equipment, and the first LED **30*a*** lights up when a wireless communication with the equipment is established. The second LED **30*b*** lights up while the game apparatus **10** is recharged. The third LED **30*c*** lights up when the main power supply of the game apparatus **10** is turned on. Thus, by the indicator **30** (LEDs **30*a***-**30*c***), it is possible to inform the user of a communication-established state, a charge state, and a main power supply on/off state of the game apparatus **10**.

Although illustration is omitted, a switch (opening and closing switch **42**: see FIG. **3**) that is switched in response to opening and closing of the game apparatus **10** is provided inside the hinge. For example, the opening and closing switch **42** is turned on when that the game apparatus **10** is in an opened state. On the other hand, the opening and closing switch **42** is turned off when that the game apparatus **10** is in a closed (folded) state. Here, it is only necessary to know that the game apparatus **10** is in the opened state or the closed state, and therefore, turning on and off of the opening and closing switch **42** may be reversed.

As described above, the upper housing **12** is provided with the first LCD **16**. In this embodiment, the touch panel **22** is set so as to cover the second LCD **18**, but the touch panel **22** may be set so as to cover the first LCD **16**. Alternatively, two touch panels **22** may be set so as to cover the first LCD **16** and the second LCD **18**. For example, on the second LCD **18**, an operation explanatory screen for teaching the user how the respective operation buttons **20***a*-**20***k* and the touch panel **22** work or how to operate them, and a game screen are displayed.

Additionally, the upper housing **12** is provided with the two cameras (inward camera **32** and outward camera **34**). As shown in FIG. **1**, the inward camera **32** is attached in the vicinity of the connected portion between the upper housing **12** and the lower housing **14** and on the surface to which the first LCD **16** is provided such that the display surface of the first LCD **16** and the imaging surface are in parallel with each other or are leveled off. On the other hand, the outward camera **34** is attached to the surface being opposed to the surface to which the inward camera **32** is provided as shown in FIG. **2** (A), that is, on the outer surface of the upper housing **12** (the surface turns to the outside when the game apparatus **10** is in a close state, and on the back surface of the upper housing **12** shown in FIG. **1**). Here, in FIG. **1**, the outward camera **34** is shown by a dashed line.

Accordingly, the inward camera **32** can image a direction to which the inner surface of the upper housing **12** is turned, and the outward camera **34** can image a direction opposite to the imaging direction of the inward camera **32**, that is, can image a direction to which the outer surface of the upper housing **12** is turned. Thus, in this embodiment, the two cameras **32**, **34** are provided such that the imaging directions of the inward camera **32** and the outward camera **34** are opposite with each other. For example, the user holding the game apparatus **10** can image a landscape (including the user, for example) as the user is seen from the game apparatus **10** with the inward camera **32**, and can image a landscape as the direction opposite to the user is seen from the game apparatus **10** with the outward camera **34**.

Additionally, on the internal surface near the aforementioned connected portion, a microphone **84** (see FIG. **3**) is housed as a voice input device. Then, on the internal surface near the aforementioned connected portion, a through hole **36** for the microphone **84** is formed so as to detect a sound outside the game apparatus **10**. The position for housing the microphone **84** and the position of the through hole **36** for the microphone **84** are not necessarily on the aforementioned connected portion, and the microphone **84** may be housed in the lower housing **14**, and the through hole **36** for the microphone **84** may be provided to the lower housing **14** in correspondence with the housing position of the microphone **84**.

Furthermore, on the outer surface of the upper housing **12**, in the vicinity of the outward camera **34**, a fourth LED **38** (dashed line in FIG. **1**) is attached. The fourth LED **38** lights up at a time when an imaging is made with the inward camera **32** or the outward camera **34** (shutter button is pushed). Furthermore, in a case that a motion image is imaged with the inward camera **32** or the outward camera **34**, the fourth LED **38** continues to light up during the imaging. That is, by making the fourth LED **38** light up, it is possible to inform an object to be imaged or his or her surrounding that an imaging with the game apparatus **10** is made (is being made).

Moreover, the upper housing **12** is formed with a sound release hole **40** on both sides of the first LCD **16**. The above-described speaker is housed at a position corresponding to the sound release hole **40** inside the upper housing **12**. The sound release hole **40** is a through hole for releasing the sound from the speaker to the outside of the game apparatus **10**.

As described above, the upper housing **12** is provided with the inward camera **32** and the outward camera **34** which are constituted to image an image, and the first LCD **16** as a displayer for mainly displaying the imaged image and a game screen. On the other hand, the lower housing **14** is provided with the input device (operation button **20** (**20***a*-**20***k*) and the touch panel **22**) for performing an operation input to the game apparatus **10** and the second LCD **18** as a displayer for mainly displaying an operation explanatory screen and a game screen. Accordingly, the game apparatus **10** has two screens (**16**, **18**) and two kinds of operating portions (**20**, **22**).

FIG. **3** is a block diagram showing an electric configuration of the game apparatus **10** of this embodiment. As shown in FIG. **3**, the game apparatus **10** includes electronic components, such as a CPU **50**, a main memory **52**, a memory controlling circuit **54**, a memory for saved data **56**, a memory for preset data **58**, a memory card interface (memory card I/F) **60**, a memory card I/F **62**, a wireless communication module **64**, a local communication module **66**, a micon **68**, a power supply circuit **70**, an interface circuit (I/F circuit) **72**, a first GPU (Graphics Processing Unit) **74**, a second GPU **76**, a first VRAM (Video RAM) **78**, a second VRAM **80**, an LCD controller **82**, etc. These electronic components (circuit components) are mounted on an electronic circuit board, and housed in the lower housing **14** (or the upper housing **12** may also be appropriate).

The CPU **50** is an information processing means for executing a predetermined program. In this embodiment, the predetermined program is stored in a memory (memory for saved data **56**, for example) within the game apparatus **10** and the memory card **26** and/or **28**, and the CPU **50** executes information processing described later (game processing in this embodiment) by executing the predetermined program.

Here, the program to be executed by the CPU **50** may be previously stored in the memory within the game apparatus **10**, acquired from the memory card **26** and/or **28**, and acquired from another appliance by communicating with the other equipment.

The CPU **50** is connected with the main memory **52**, the memory controlling circuit **54**, and the memory for preset data **58**. The memory controlling circuit **54** is connected with the memory for saved data **56**. The main memory **52** is a memory means to be utilized as a work area and a buffer area of the CPU **50**. That is, the main memory **52** stores (temporarily stores) various data to be utilized in the aforementioned information processing, and stores a program from the outside (memory cards **26** and **28**, and another equipment). In this embodiment, as a main memory **52**, a PSRAM (Pseudo-SRAM) is used, for example. The memory for saved data **56** is a memory means for storing (saving) a program to be executed by the CPU **50**, data of images imaged by the inward camera **32** and the outward camera **34**, etc. The memory for saved data **56** is constructed by a nonvolatile storage medium, and can utilize a NAND type flash memory, for example. The memory controlling circuit **54** controls reading and writing from and to the memory for saved data **56** according to an instruction from the CPU **50**. The memory for preset data **58** is a memory means for storing data (preset data), such as various parameters, etc. which are previously set in the game apparatus **10**. As a memory for preset data **58**, a flash memory to be connected to the CPU **50** through an SPI (Serial Peripheral Interface) bus can be used.

Both of the memory card I/Fs **60** and **62** are connected to the CPU **50**. The memory card I/F **60** performs reading and writing data from and to the memory card **26** attached to the connector according to an instruction form the CPU **50**. Furthermore, the memory card I/F **62** performs reading and writing

ing data from and to the memory card **28** attached to the connector according to an instruction form the CPU **50**. In this embodiment, image data corresponding to the images imaged by the inward camera **32** and the outward camera **34** and image data received by other devices are written to the memory card **26**, and the image data stored in the memory card **26** is read from the memory card **26** and stored in the memory for saved data **56**, and sent to other devices. Furthermore, the various programs stored in the memory card **28** are read by the CPU **50** so as to be executed.

Here, the information processing program such as a game program is not only supplied to the game apparatus **10** through the external storage medium, such as a memory card **28**, etc. but also is supplied to the game apparatus **10** through a wired or a wireless communication line. In addition, the information processing program may be recorded in advance in a nonvolatile storage device inside the game apparatus **10**. Additionally, as an information storage medium for storing the information processing program, an optical disk storage medium, such as a CD-ROM, a DVD or the like may be appropriate beyond the aforementioned nonvolatile storage device.

The wireless communication module **64** has a function of connecting to a wireless LAN according to an IEEE802.11.b/g standard-based system, for example. The local communication module **66** has a function of performing a wireless communication with the same types of the game apparatuses by a predetermined communication system. The wireless communication module **64** and the local communication module **66** are connected to the CPU **50**. The CPU **50** can receive and send data over the Internet with other appliances by means of the wireless communication module **64**, and can receive and send data with the same types of other game apparatuses by means of the local communication module **66**.

Furthermore, the CPU **50** is connected with the micon **68**. The micon **68** includes a memory **68***a* and an RTC **68***b*. The memory **68***a* is a RAM, for example, and stores a program and data for a control by the micon **68**. The RTC **68***b* counts a time. In the micon **68**, date and a current time, etc. can be calculated on the basis of the time counted by the RTC **68***b*.

The micon **68** is connected with the power button **20***f*, the opening and closing switch **42**, the power supply circuit **70**, and the acceleration sensor **88**. A power-on signal is given to the micon **68** from the power button **20***f*. When the power button **20***f* is turned on in a state that the main power supply of the game apparatus **10** is turned off, the memory **68***a* functioning as a BootROM of the micon **68** is activated to perform a power control in response to opening and closing of the game apparatus **10** as described later. On the other hand, when the power button **20***f* is turned on in a state that the main power supply of the game apparatus **10** is turned on, the micon **68** instructs the power supply circuit **70** to stop supplying power to all the circuit components (except for the micon **68**). Here, the power supply circuit **70** controls the power supplied from the power supply (typically, a battery housed in the lower housing **14**) of the game apparatus **10** to supply power to the respective circuit components of the game apparatus **10**.

Furthermore, from an opening and closing switch **42**, a power-on signal or a power-off signal is applied to the micon **68**. In a case that the main power supply of the game apparatus **10** is turned on in a state that the opening and closing switch **42** is turned on (the main body of the game apparatus **10** is in an opened state), a mode in which a power is supplied from the power supply circuit **70** to all the circuit components of the game apparatus **10** under the control of the micon **68** (hereinafter referred to as "normal mode") is set. In the normal mode, the game apparatus **10** can execute an arbitrary application and is in use by a user or a player (used state).

Furthermore, in a case that the opening and closing switch **42** is turned off in a state that the power supply of the game apparatus **10** is turned on (the main body of the game apparatus **10** is in a closed state), a mode in which a power is supplied from the power supply circuit **70** to a part of the components of the game apparatus **10** (hereinafter referred to as "sleep mode") is set. However, depending on the kind of the applications and executing (progressing) situation of the applications, the sleep mode may not be set. Whether the sleep is executed or not is determined by the CPU **50**, and when execution of the sleep is determined, the CPU **50** instructs the micon **68** to execute sleep. Here, in a case that the opening and closing switch **42** is turned off, when it is determined that the sleep mode cannot be set, a power supply from the power supply circuit **70** to the first LCD **16** and the second LCD **18** are suspended according to an instruction from the micon **68**.

In the sleep mode, the game apparatus **10** cannot execute an arbitrary application and is not in use (unused state) by the user. In this embodiment, the part of the components is the CPU **50**, the wireless communication module **64**, and the micon **68**. Here, in the sleep mode (sleep state), the CPU **50** basically sets a clock in a stopped (inactivated) state, resulting in less power consumption. Additionally, in the sleep mode, a power supply to the CPU **50** may be stopped. Accordingly, in this embodiment, in the sleep mode, an application is never executed by the CPU **50** as described above.

It should be noted that in a case that a communication is executed by the wireless communication module **64** in the sleep state, the CPU **50** is activated by a control signal from the wireless communication module **64**. That is, by the wireless communication module **64**, the clock of the CPU **50** is operated, and then, the wireless communication module **64** instructs the CPU **50** to start a communication. This holds true hereunder. Then, the CPU **50** instructs the micon **68** to start supplying power to the memory controlling circuit **54** and the memory for saved data **56**. Accordingly, it is possible to transmit data stored in the memory for saved data **56** to another game apparatus **10**, etc. and store data received from another game apparatus **10**, etc. in the memory for saved data **56**, by a communication.

Furthermore, in a case that step count data (accumulative step count data **152***c* described later) is output from the micon **68** in the sleep state, the CPU **50** is activated by a control signal from the micon **68**. That is, the clock of the CPU **50** is activated by the micon **68** to notify the output of the step count data. Furthermore, the micon **68** controls the power supply circuit **70** to start supplying electric power to the memory controlling circuit **54** and the memory for saved data **56**. Accordingly, the step data output from the micon **68** is stored in the memory for saved data **56**.

In addition, when the sleep state is canceled (non-sleep state) due to the game apparatus **10** being opened, and so forth, a power-off signal is input to the micon **68** from the opening and closing switch **42**. Thus, the micon **68** activates the CPU **50** to notify the CPU **50** of the cancelation of the sleep state. In response thereto, the CPU **50** instructs the micon **68** to cancel the sleep state. That is, under the instruction from the CPU **50**, the micon **68** controls the power supply circuit **70** to start supplying electric power to all the circuit components. Thus, the game apparatus **10** shifts to the normal mode to enter the used state. Here, in a case that the sleep mode is not set, when the game apparatus **10** is opened, under the instruction from the CPU **50**, the micon **68** supplies electric power to the first LCD **16** and the second LCD **18** by controlling the power supply circuit **70**.

Moreover, as described above, the micon **68** is connected with the acceleration sensor **88**. For example, the acceleration sensor **88** is a three-axis acceleration sensor, and provided inside the lower housing **14** (the upper housing **12** may be possible). This detects an acceleration in a direction vertical to the surface of the first LCD **16** (second LCD **18**) of the game apparatus **10**, and accelerations in two crosswise directions (longitudinal and laterally) that are parallel to the first LCD **16** (second LCD **18**). The acceleration sensor **88** outputs a signal as to the detected acceleration (acceleration signal) to the micon **68**. The micon **68** can detect a direction of the game apparatus **10**, and a magnitude of the shake of the game apparatus **10** on the basis of the acceleration signal. Accordingly, it is possible to make the micon **68** and the acceleration sensor **88** function as a pedometer, for example. The pedometer using the acceleration sensor **88** is already known, and therefore, the detailed content is omitted, but the step counts are measured in correspondence with the magnitude of the acceleration.

Also, the game apparatus **10** includes the microphone **84** and an amplifier **86**. Both of the microphone **84** and the amplifier **86** are connected to the I/F circuit **72**. The microphone **84** detects a voice and a sound (clap and handclap, etc.) of the user produced or generated toward the game apparatus **10**, and outputs a sound signal indicating the voice or the sound to the I/F circuit **72**. The amplifier **86** amplifies the sound signal applied from the I/F circuit **72**, and applies the amplified signal to the speaker (not illustrated). The I/F circuit **72** is connected to the CPU **50**.

The touch panel **22** is connected to the I/F circuit **72**. The I/F circuit **72** includes a sound controlling circuit for controlling the microphone **84** and the amplifier **86** (speaker), and a touch panel controlling circuit for controlling the touch panel **22**. The sound controlling circuit performs an A/D conversion and a D/A conversion on a sound signal, or converts a sound signal into sound data in a predetermined format. The touch panel controlling circuit generates touch position data in a predetermined format on the basis of a signal from the touch panel **22** and outputs the same to the CPU **50**. For example, the touch position data is data indicating coordinates of a position where an input is performed on an input surface of the touch panel **22**.

Additionally, the touch panel controlling circuit performs reading of a signal from the touch panel **22** and generation of the touch position data per each predetermined time. By fetching the touch position data via the I/F circuit **72**, the CPU **50** can know the position on the touch panel **22** where an input is made.

The operation button **20** is made up of the aforementioned respective operation buttons **20***a*-**20***k* (except for the power switch **22***f*. This hold true for the following), and is connected to the CPU **50**. The operation data indicating an input state (whether or not to be pushed) with respect to each of the operation buttons **20***a*-**20***k* is output from the operation button **20** to the CPU **50**. The CPU **50** acquires the operation data from the operation button **20**, and executes processing according to the acquired operation data.

Both of the inward camera **32** and the outward camera **34** are connected to the CPU **50**. The inward camera **32** and the outward camera **34** image images according to instructions from the CPU **50**, and output image data corresponding to the imaged images to the CPU **50**. In this embodiment, the CPU **50** issues an imaging instruction to any one of the inward camera **32** and the outward camera **34** while the camera (**32**, **34**) which has received the imaging instruction images an image and transmits the image data to the CPU **50**.

The first GPU **74** is connected with the first VRAM **78**, and the second GPU **76** is connected with the second VRAM **80**. The first CPU **74** generates a first display image on the basis of data for generating the display image stored in the main memory **52** according to an instruction from the CPU **50**, and draws the same in the first VRAM **78**. The second GPU **76** similarly generates a second display image according to an instruction form the CPU **50**, and draws the same in the second VRAM **80**. The first VRAM **78** and the second VRAM **80** are connected to the LCD controller **82**.

The LCD controller **82** includes a register **82***a*. The register **82***a* stores a value of "0" or "1" according to an instruction from the CPU **50**. In a case that the value of the register **82***a* is "0", the LCD controller **82** outputs the first display image drawn in the first VRAM **78** to the second. LCD **18**, and outputs the second display image drawn in the second VRAM **80** to the first LCD **16**. Furthermore, in a case that the value of the register **82***a* is "1", the LCD controller **82** outputs the first display image drawn in the first VRAM **78** to the first LCD **16**, and outputs the second display image drawn in the second VRAM **80** to the second LCD **18**.

For example, such a game apparatus **10** executes in-passing (StreetPass) communication processing or unconscious (SpotPass) communication processing in the unused state (or when being set to a sleep mode). Here, the in-passing communication processing is briefly explained. In the sleep mode, the wireless communication module **64** automatically transmits (broadcasts) a signal (connection request signal, beacon) indicating a connection request to other game apparatuses **10** regarding a predetermined time (30 ms, for example) as a search period during the search period, and tries to receive a connection request signal from other game apparatuses **10**. The search period is repetitively set. That is, in-passing communication processing is automatically intermittently executed. Thus, other game apparatuses **10** in coverage of the short distance wireless communication are searched (sought, scanned). Here, the connection request signal includes identifying information of the game apparatus **10** being a transmission source.

At this time, when receiving the connection request signal, the game apparatus **10** transmits a connection admission signal to the game apparatus **10** being a transmission source of the connection request signal in response thereto. Here, the connection admission signal includes identifying information of the game apparatus **10** being a transmission source. This makes it possible to confirm each other's existences between the two game apparatuses **10** to thereby establish a connection or a communication state between them.

Here, in the game apparatus **10** that transmits the connection admission signal in response to the connection request signal, the wireless communication module **64** activates the CPU **50** to start supplying electric power from the power supply circuit **70** to the memory controlling circuit **54** and the memory for saved data **56** under the control of the micon **68** according to an instruction from the CPU **50**. Similarly, in the game apparatus **10** which receives the connection admission signal, the wireless communication module **64** activates the CPU **50** to start supplying electric power from the power supply circuit **70** to the memory controlling circuit **54** and the memory for saved data **56** under the control of the micon **68** according to an instruction from the CPU **50**.

When a communication state is established, data set (decided) in advance, such as game data, message data, etc. is transmitted or received, or transmitted and received between the two game apparatuses **10**.

Although the detailed description is omitted, when the in-passing communication is ended (when data transmission and data reception in relation to the in-passing communication are completed), each game apparatus **10** returns to the sleep state.

Also, the detailed description is omitted, in a case that in-passing communication is executed, out of the two game apparatuses **10** that establish the connection state, the game apparatus **10** that transmits a connection request signal functions as a parent machine, and the game apparatus **10** that transmits a connection admission signal in response to the connection request signal functions as a child machine.

Accordingly, when the user or the player carries the game apparatus **10** in the unused state (or, sleep state), a communication (in-passing communication) is automatically made with other game apparatuses **10** without any operation to thereby acquire data, such as game data, message data, etc. from the other game apparatus **10**.

Next, the unconscious communication processing is simply explained. The unconscious communication is to automatically connect to a predetermined server via a predetermined access point, and automatically make communication processing with this server. The wireless communication module **64** regards a period other than the search period for in-passing communication as a search period for unconscious communication, and tries to receive a beacon from the predetermined access point within the search period for the unconscious communication. The unconscious search period is repetitively set at regular time intervals. That is, the unconscious communication processing is executed automatically intermittently. Thus, predetermined access points in coverage of the short distance wireless communication are searched. Here, the beacon includes identification information of the access point.

At this time, when the game apparatus **10** receives a beacon from the predetermined access point, it automatically connects to this access point, and further automatically connects to the predetermined server via this access point.

Here, in the game apparatus **10** receiving the beacon, the wireless communication module **64** activates the CPU **50** to start supplying power from the power supply circuit **70** to the memory controlling circuit **54** and the memory for saved data **56** under the control of the micon **68** according to an instruction from the CPU **50**.

When a connection with the server is established, game data, message data, etc. are transmitted from the server, and these data are received via the predetermined access point.

Although the detailed explanation is omitted, when the unconscious communication is ended (or data transmission and data reception in relation to the unconscious communication are completed), each game apparatus **10** returns to the sleep state.

Accordingly, when the user or the player carries the game apparatus **10** in the unused state (or, sleep state), communications (unconscious communication) are automatically made with the predetermined access point and the predetermined server without any operation to thereby acquire game data, message data, etc. from this server via this access point.

Furthermore, as described above, in the sleep mode, the game apparatus **10** functions as a pedometer, and in a case that the user or the player walks with the game apparatus **10**, the number of step counts of the user or the player is counted. The counted step count is reflected on the processing of application programs to be executed in the game apparatus **10** as necessary.

For example, in the memory for saved data **56** shown in FIG. **3**, application programs as to a plurality of applications can be stored. When the main power supply of the game apparatus **10** is turned on, a main menu screen **200** for selecting an application, etc. as shown in FIG. **4**(A) is displayed on the second LCD **18** (first LCD **16** may be possible).

Here, although the detailed description is omitted, in a case that each application is ended as well, the main menu screen **200** is displayed.

As shown in FIG. **4**(A), on the main menu screen **200**, a plurality of button images **202**, **204**, . . . for selecting an application are provided, and below it, button images **210**, **212** for selecting various settings and options are provided. The user or the player turns on the button images **202**, **204**, . . . to thereby select a desired application.

When the button image **202** is turned on, for example, a first application is selected. In a situation in which an item is purchased during the game according to a program (first application program) of the first application, a screen (item purchasing screen) **300** as shown in FIG. **4**(B) is displayed on the second LCD **18** (even the first LCD **16** may be possible).

On the item purchasing screen **300**, button images **302**, **304**, **306**, **308**, **310**, **312** are displayed. For example, the button images **302** to **308** are provided for selecting an item (normal item: the first to fourth items) which the player (user) or the player character can purchase by using coins (hereinafter referred to as "normal coin") acquired in the game. Furthermore, the button image **310** and the button image **312** are provided for selecting an item (special items A, B) by using the coin (hereinafter referred to as "earned coin") earned depending on the measured step counts.

Here the normal coins are coins which are arranged within the game space, are given as a reward for labor or training in the game, or are given in correspondence with a victory in the battle game, etc., and are acquired by the player or the player character in the game as described above. Also, the earned coins are coins earned by converting the measured step counts measured by the game apparatus **10** carried by the player, and cannot be acquired in the game.

Although the detailed description is omitted, the number of normal coins required to purchase the first to fourth items and the number of earned coins required to purchase the special items A, B are decided in advance. Naturally, in a case that the player (user) or the player character does not have the normal coins or the earned coins being equal to or more than the required number of normal coins or the required number of earned coins, he or she cannot purchase the first to fourth items or the special items A, B.

That is, the normal item is purchased and used to thereby advance the game, and the special item is purchased and used to thereby advance the game. Also, in a case that the purchased special item (purchased special item) is a tool, for example, the player character can use the tool. For example, by using the purchased item, the ability of the player character **102** is changed to thereby support the advance of the game. In such a case, the player characters **102** is increased in the remaining number, restored in the physical strength, is heightened in the attack power for a certain period of time, is made invincible for a certain period of time, or has more friends, for example. Moreover, if the number of attacks is restricted, the number of attacks is increased.

Furthermore, when the button image **204** is turned on on the main menu screen **200** shown in FIG. **4**(A), the second application is selected. For example, at a start (restart) of the game according to the program of the second application (second application program), in the situation in which a course is selected, a screen (course selecting screen) **400** as shown in FIG. **4**(C) is displayed on the second LCD **18** (the first LCD **16** may be possible).

On the course selecting screen **400**, button images **402**, **404**, **406**, **408**, **410**, **412** are displayed. For example, the button images **402** to **408** are provided for selecting the course (normal course: the first to fourth courses) capable of selecting without using the earned coins. Furthermore, the button image **410** and the button image **412** are provided for selecting the course (special course A, B) capable of playing with the use of the earned coins.

Although the detailed description is omitted, the number of earned coins required to play on the special courses A, B is decided in advance. Naturally, in a case that the player (user) or the player character does not have the required number of earned coins or more, he or she cannot play the game on the special course A, B.

Here, if a playable state on the special course A, B is established by using the earned coin once, the game may be playable without limitation, or the playable number and the playable period may be set.

Thus, the normal course is selected to thereby play the normal course, and the special courses A, B are selected to thereby play in the special courses A, B. For example, the special courses A, B are courses for training game technique and courses at level higher in the difficulty level than the normal course. That is, the special courses A, B are secondarily courses playable in accordance with walking by the player.

The earned coin acquired by converting the step counts can thus commonly be used in the processing of a plurality of different applications programs. Here, for simplicity, the explanation is made when the earned coins are used in the processing of the two application programs, but the earned coins can be used in the processing of the different three or more application programs. Here, the application programs need not be stored (installed) in the memory for saved data **56**, may be read from the memory cards **26**, **28** attached to the game apparatus **10**, or may be downloaded from the external equipment.

FIG. **5** is an illustrative view showing a memory map of the memory for saved data **56** shown in FIG. **3**. As shown in FIG. **5**, the memory for saved data **56** includes a program memory area **90** and a data memory area **100**. In the program memory area **90**, a main body processing program **92**, a first application program **94**, a second application program **96**, . . . are stored.

The main body processing program **92** is made up of a main menu screen displaying program **92***a*, a step count acquiring program **92***b*, a coin earning program **92***c*, etc.

The main menu screen displaying program **92***a* is a program for displaying the main menu screen **200** shown in FIG. **4**(A) in a case that the main power supply of the game apparatus **10** is turned on or in a case that the processing of the application is ended.

The step count acquiring program **92***b* is a program for receiving data (step count data) as to step counts transmitted from the micon **68**, and storing the same in the data memory area **100**.

The coin earning program **92***e* is a program for converting step counts indicated by the step count data (**1020**, **1022**, . . . , **102***m*) into earned coins. In this embodiment, conversion is made to the earned coins as a value correlated to step counts (correlation value), but there is no need of being restricted thereto, and conversion to other items or parameters may be possible.

Although illustration is omitted, in the main body processing program **92**, sound outputting program, etc. is also stored. The sound outputting program is a program for outputting a sound (sound effect), and music (BGM).

The first application program **94** is made up of an image displaying program **94***a*, an item selecting program **94***b*, a total earned coin count acquiring program **94***c*, an item purchasing program **94***d*, etc.

The image displaying program **94***a* is a program for displaying a game image (game screen) on the first LCD **16** and the second LCD **18**. More specifically, the image displaying program **94***a* is executed to generate a game image by using image data not shown (polygon data, texture data, etc.), and to output the same on the first LCD **16** and the second LCD **18**. This holds true hereunder.

The item selecting program **94***b* is a program for determining whether or not an item is selected according to an instruction from the user or the player. More specifically, it is determined whether or not any button images **302-312** is turned on on the item selecting screen **300** shown in FIG. **4**(B).

The total earned coin count acquiring program **94***c* is a program for acquiring a total number of earned coins (hereinafter referred to as "total earned coin count"). More specifically, total earned coin count data **1028** included in the earned coin count data **102***b* stored in a shared data memory area **102** described later is read.

The item purchasing program **94***d* is a program for purchasing the normal item (the first to fourth items) or the special item (special items A, B) by using the normal coin or the earned coin.

Although illustration is omitted, the first application program includes a main processing program, sound outputting program, a backup program, a various processing program, etc. The main processing program is a program for processing a main routine of the first application. The sound outputting program is a program for outputting a sound (sound effect) and music (BGM) associated with execution of the first application program. Furthermore, the backup program is a program for storing (saving) game data (proceeding data, end data) stored in the main memory **52** in the first application memory area **104** (see FIG. **6**) of the memory for saved data **56** and the memory cards **26**, **28** according to an instruction from the user or the player, or according to a predetermined event. The various processing program is a program for making the player character move or make an action according to an operation by the player, making the non-player character (enemy character, for example) move or make an action, calculating scores, determining game clear and game over, executing processing according to a game event, and executing game screen displaying (updating) processing. This holds true for other application programs including the second application program.

In addition, the second application program **96** is made up of an image displaying program **96***a*, a course selecting program **96***b*, a total earned coin count acquiring program **96***c*, a permission flag setting program **96***d*, etc.

The image displaying program **96***a* and the total earned coin count acquiring program **96***c* are the same as the above-described image displaying program **94***a* and total earned coin count acquiring program **94***e*, and a redundant explanation therefor is omitted.

The course selecting program **96***b* is a program for determining whether or not any one of the button images **402** to **412** is turned on on the course selecting screen **400** as shown in FIG. **4**(C) at a start (restart) of the game.

The permission flag setting program **96***d* is a program for setting a flag (permission flag) as to whether or not game playing is performed at the special course (special courses A, B).

Although illustration is omitted, the second application program **96** includes a main processing program, a sound outputting program, a backup program, a various processing program, etc.

Also, although omitted in FIG. **5**, in the program memory area **90**, other application programs are also stored.

As shown in FIG. **6**, the data memory area **100** of the memory for saved data **56** includes the shared data memory area **102**, the first application memory area **104**, a second application memory area **106**, etc.

The shared data memory area **102** is an area accessible irrespective of the kind of an active application program. That is, this is an area capable of writing to and reading from even if either application is executed. In the shared data memory area **102**, accumulative step count data **102***a*, earned coin count data **102***b*, previous step count accumulative data **102***c*, current step count accumulative data **102***d*, previous-time day data **102***e*, previous-time day step count data **102***f*, etc. are stored. The accumulative step count data **102***a* includes first step count data **1020**, second step count data **1022**, . . . , m-th step count data **102***m*. The step count data **1020**-**102***m* is data as to step counts acquired by the micon **68** every unit of time, and includes information about a time (date and time (hour, minute, second)) when the step counts are acquired. Here, the step count data (**1020**, **1022**, . . . , **102***m*) is acquired from the micon **68** and stored in the data memory area **100** in a case that the main menu screen **200** is displayed on the second LCD **18** (or the first LCD **16**) of the game apparatus **10**.

The earned coin count data **102***b* includes the total earned coin count data **1028** and previously earned coin count data **1030**. The total earned coin count data **1028** is numerical value data as to a total earned coin count. The previously earned coin count data **1030** is numerical value data as to the number of earned coins when the step counts are previously converted into the earned coins.

The previous step count accumulative data **102***c* is numerical value data as to an accumulative amount of step counts until the step counts are previously converted into the earned coins. The current step count accumulative data **102***d* is numerical value data as to an accumulative amount of step counts until now. The previous-time day data **102***e* is data as to a date (year, month and day) when the step counts are previously converted into coins (change to coins). The previous-time day step count data **102***f* is numerical value data as to step counts before a change to coins is made out of the step counts at the date (year, month and day) when a change to coin is previously performed.

Furthermore, the first application memory area **104** is an area accessible only when the first application program **94** is executed. In the first application memory area **104**, item data **104***a* and total normal coin count data **104***b* are stored.

Although illustration is omitted, the item data **104***a* is data indicating whether or not an item (normal item, special item) is acquired (possessed), and a flag is set by being brought into correspondence with each item. In a case that an "item" is simply referred, this means both of the normal item and the special item. In a case that the player (user) or the player character has (possesses) an item, the flag corresponding to the item is turned on. On the other hand, in a case that the player (user) or the player character does not have (possesses) an item, the flag corresponding to the item is turned off. Furthermore, the total normal coin count data **104***b* is numerical value data indicating a total number of normal coins possessed (had) by the player or the player character in the game. The total number of normal coins indicated by the total normal coin count data **104***b* is increased by being acquired by the player or the player character in the game, and decreased by being used by the player or the player character in the game.

Here, for simplicity, only two pieces of data like the item data **104***a* and the total normal coin count data **104***b* are described, but the game data including the item data **104***a* and the total normal coin count data **104***b* is actually stored.

In addition, the second application memory area **106** is an area accessible only when the second application program **96** is executed. In the second application memory area **106**, course permission data **106***a* is stored. Although illustration is omitted, the course permission data **106***a* is data of a permission flag as to whether or not playing on the special courses A, B is permitted. If playing on the special courses A, B is permitted, the flag corresponding to each of the special courses A, B is turned on. On the other hand, if playing on the special courses A, B is not permitted, the flag corresponding to each of the special courses A, B is turned off.

Here, only the course permission data **106***a* is described for simplicity, but the game data including the course permission data **106***a* is actually stored.

Additionally, in the data memory area **100**, a memory area for other applications is provided.

In addition, although detailed description is omitted, the main body processing program **92** and the application program (**94**, **96**, . . .) to be executed by the CPU **50** are read (loaded) into the main memory **52**. Moreover, data generated or created during execution of the main body processing program **92** and the application program (**94**, **96**, . . .) is stored in the main memory **52**, and stored (saved) in the memory for saved data **56** as necessary.

FIG. **7** is a memory map of the memory **68***a* provided to the micon **68**. The memory **68***a* includes a program memory area **150** and a data memory area **152**. In the program memory area **150**, programs, such as a step count counting program **150***a*, an electric power controlling program **1506**, etc. are stored.

The step count counting program **150***a* is a program for counting step counts. In this embodiment, the step count counting program **150***a* is a program for counting step counts on the basis of a change amount of accelerations (three-axis accelerations) indicated by the acceleration data from the acceleration sensor **88**. The electric power controlling program **150***b* is a program for instructing the CPU **50** to switch between the normal mode (non-sleep state) and the sleep mode (sleep state) in response to an on and an off signal from the opening and closing switch **42**, and controlling electric power supply from the power supply circuit **70** to each of the circuit components according to an instruction from the CPU **50**. This makes it possible to switch between the used state and the unused state of the game apparatus **10**.

Although illustration is omitted, in the program memory area **150***b*, other programs are also stored.

In the data memory area **152**, a timer **152***a* and a step count counter **152***b* are provided. The timer **152***a* is a timer for counting a time from the start of counting step counts. The step count counter **152***b* is an up counter for counting step counts.

Furthermore, in the data memory area **152**, accumulative step count data **152***c* is stored. The accumulative step count data **152***c* includes first step count data **1520**, second step count data **1522**, . . . , n-th step count data **152***n*. Here, each step count data (**1520**, **1522**, . . . , **152***n*) is data as to step counts per first unit of time (one hour in this embodiment). For example, the first step count data **1520**, the second step count data **1522**, . . . , the n-th step count data **152***n* are stored in this order. Additionally, in the sleep mode, the accumulative step count data **152***c* stored in the data memory area **152** per second unit of time (three hours in this embodiment) due to the relatively low capacity of the memory **68***a* is output to the CPU **50**, and moved (saved) to the memory for saved data **56** via the memory controlling circuit **54**. As explained in detail, the micon **68** operates a clock of the CPU **50**, controls the power supply circuit **70** to start supplying electric power to the memory controlling circuit **54** and the memory for saved data **56**, and then outputs the accumulative step count data **152***c* to the CPU **50**. Then, the CPU **50** stores the accumulative step count data **152***c* in the memory for saved data **56** via the memory controlling circuit **54**. Thereafter, the micon **68** stops the clock of the CPU **50**, and controls the power supply circuit **70** to stop supplying the electric power to the memory controlling circuit **54** and the memory for saved data **56**.

Each of FIG. **8** and FIG. **9** is entire processing by the CPU **50** shown in FIG. **3**. When the main power supply of the game apparatus **10** is turned on, the CPU **50** starts entire processing to display the main menu screen **200** as shown in FIG. **4**(A) in a step S**1** as shown in FIG. **8**. In a succeeding step S**3**, coin earning processing (see FIG. **10**-FIG. **12**) described later is executed. Then, in a step S**5**, it is determined whether or not the first application is selected. That is, it is determined whether or not the button image **202** representing the first application is turned on on the main menu screen **200**.

If "YES" in the step S**5**, that is, if the first application is selected, first application executing processing (see FIG. **15** and FIG. **16**) described later is executed in a step S**7**, and then, the process proceeds to a step S**13**. On the other hand, if "NO" in the step S**5**, that is, if the first application is not selected, it is determined whether or not the second application is selected in a step S**9**. That is, it is determined whether or not the button image **204** representing the second application is turned on on the main menu screen **200**.

If "YES" in the step S**9**, that is, if the second application is selected, second application executing processing (see FIG. **17**) described later is executed in a step S**11**, and then, the process proceeds to the step S**13**. On the other hand, if "NO" in the step S**9**, that is, if execution of the second application is not selected, the process proceeds to the step S**13** as it is.

Additionally, in this embodiment, if "NO" in the step S**9**, the process directly proceeds to the step S**13**. However, if another application is selectable, it is determined whether or not execution of the other application is selected.

Furthermore, in this embodiment, a case that one application is selectable from the two applications is shown, but only one application may be made selectable.

That is, depending on the number of application programs that is stored in the memory cards **26**, **28** and the memory for saved data **56**, and the number of downloaded application programs, the number of selectable applications is variably set.

Returning to FIG. **8**, it is determined whether or not there is an instruction for sleep in the step S**13**. That is, the CPU **50** determines whether or not there is an instruction of sleep from the micon **68**. Here, in a case that the opening and closing switch **42** is turned off, the micon **68** instructs the CPU **50** of the sleep.

If "NO" in the step S**13**, that is, if there is no instruction for sleep, it is determined whether or not any one of the applications is being executed in a step S**15**. If "NO" in the step S**15**, that is, if no application is being executed, the process returns to the step S**1** as it is.

On the other hand, if "YES" in the step S**15**, that is, if any one of the applications is being executed, the application that is being executed is continued in a step S**17**. Successively, in a step S**19**, it is determined whether or not the application is to be ended. In the step S**19**, the CPU **50** determines whether or not there is an instruction for an application end from the user or the player.

If "NO" in the step S**19**, that is, if the application is not be ended, the process returns to the step S**17** as it is. On the other hand, if "YES" in the step S**19**, that is, if the application is to be ended, the execution of the application is ended although the illustration is omitted, and the process returns to the step S**1**.

Alternatively, if "YES" in the step S**13**, that is, if there is an instruction for sleep, the micon **68** is instructed to start counting step counts in a step S**21**. In a next step S**23**, the micon **68** is instructed to execute the sleep. Accordingly, the micon **68** stops the clock of the CPU **50**, and controls the power supply circuit **70** to stop supplying electric power to the circuit components except for the wireless communication module **64**. Here, the CPU **50** stores the game data of the main memory **52** in the memory area for application (**104**, **106**, . . .), and then stops the application if the application is being executed.

It should be noted that the CPU **50** and the micon **68** are always supplied with the electric power as described above.

Successively, in a step S**25**, in-passing communication processing or unconscious communication processing is executed. Here, during the sleep, the clock of the CPU **50** has been stopped, and therefore, when the wireless communication module **64** receives a connection request signal and a connection admission signal from other game apparatuses **10** and access points, the wireless communication module **64** activates the CPU **50** to execute the in-passing communication processing or the unconscious communication processing. At this time, under the instruction of the CPU **50**, the micon **68** controls the power supply circuit **70** to start supplying electric power to the memory controlling circuit **54** and the memory for saved data **56**.

In a next step S**27**, it is determined whether or not there is an instruction for a sleep cancelation. That is, the CPU **50** determines whether or not a clock is operated by the micon **68**. If "NO" in the step S**27**, that is, if there is no instruction for a sleep cancelation, the process returns to the step S**25**.

Here, the description is made such that the processing in the steps S**25** and S**27** are executed by the CPU **50**, but the CPU **50** actually executes no processing during the sleep. In a case that the CPU **50** is activated by the wireless communication module **64** and the micon **68**, it executes in-passing communication, unconscious communication, and normal processing (game processing, etc.).

Alternatively, if "YES" in the step S**27**, that is, if there is an instruction for a sleep cancelation, the micon **68** is instructed to cancel the sleep in a step S**29** shown in FIG. **9**. In a succeeding step S**31**, the micon **68** is instructed to stop counting the step counts. Then, in a step S**33**, a step count value is read from the memory **68***a* of the micon **68**, and in a step S**35**, each of the step count values to which a date and time is added for every unit of time is stored.

That is, the CPU **50** reads the accumulative step count data **152***c* (the first to the n-th step count data **1520**-**152***n*) from the memory **68***a* of the micon **68** in the step S**33**, and writes the same in the data memory area **100** of the memory for saved data **56** in the step S**35**. At this time, the CPU **50** writes (overwrites) a copy of the current step count accumulative data **102***d* to the previous step count accumulative data **102***c*, and then stores (overwrites) the numerical value data of the total value of step counts acquired by adding the total value of step counts currently read to the current accumulative amount of step counts (the previous accumulative amount of step counts) indicated by the current step count accumulative data **102***d* (or previous step count accumulative data **102***c*) as current step count accumulative data **102***d*. Here, the current step count accumulative data **102***d* may be the numerical value data of the total value of step counts indicated by the accumulative step count data **102***a*, that is, the total value of step counts indicated by the first step count data **1020**, the second step count data **1022**, . . . , the m-th step count data **102***m*.

Returning to FIG. **9**, in a step S**37**, it is determined whether or not any one of the applications is being executed. Here, the CPU **50** determines whether or not the execution of the application has been suspended due to the sleep during execution of the application. If "NO" in the step S**37**, that is, if no application is being executed, the process returns to the step S**1** shown in FIG. **8**.

On the other hand, if "YES" in the step S**37**, that is, if any one of the applications is being executed, the process is restarted (returns) to the application that is being executed in a step S**39**. At this time, the CPU **50** reads the game data stored in the memory area for application (**104**, **106**, . . .) before execution of the sleep, and writes (loads) the same in the main memory **52**. Successively, in a step S**41**, the execution of the application is continued, and in a step S**43**, it is determined whether or not the application is to be ended.

If "NO" in the step S**43**, that is, if the application is not to be ended, the process returns to the step S**41** as it is. On the other hand, if "YES" in the step S**43**, that is, if the application is to be ended, the execution of the application is ended although illustration is omitted, and the process returns to the step S**1**.

FIG. **10** is a flowchart showing the coin earning processing shown in the step S**3** in FIG. **8**. As shown in FIG. **10**, when starting the coin earning processing, the CPU **50** determines whether or not the current total earned coin count is equal to or more than 3000 in a step S**51**. Here, as described above, the total earned coin count is a total number of earned coins indicated by the total earned coin count data **1028**. That is, the CPU **50** determines whether or not the total earned coin count is equal to or more than 3000 (upper limit or not) with reference to the total earned coin count data **1028** stored in the data memory area **100** of the memory for saved data **56**.

If "YES" in the step S**51**, that is, if the current total earned coin count is equal to or more than 3000, it is determined that the total coin count reaches the upper limit, and the process returns to the entire processing as it is. On the other hand, if "NO" in the step S**51**, that is, if the current total earned coin count is less than 3000, it is determined whether or not the current accumulative amount of step counts the previous accumulative amount of step counts is equal to or more than 10 in a step S**53**. Here, the CPU **50** determines whether or not the user or the player walks by the minimum step counts required for conversion to a current earned coin. That is, in this embodiment, ten steps are converted into one earned coin. Here, the CPU **50** performs the determination processing in the step S**53** by subtracting the previous accumulative amount of step counts indicated by the previous step count accumulative data **102***e* stored in the data memory area **100** of the memory for saved data **56** from the current accumulative amount of step counts indicated by the current step count accumulative data **102***d* stored in the data memory area **100** of the memory for saved data **56**. Here, a ratio of converting the step counts into an earned coin is mere one example and is not restricted to it.

If "NO" in the step S**53**, that is, if the current accumulative amount of step counts—the previous accumulative amount of step counts is less than 10, the process returns to the entire processing. On the other hand, if "YES" in the step S**53**, that is, if the current accumulative amount of step counts—the previous accumulative amount of step counts is equal to or more than 10, a date when a change to coin is previously performed is substituted into a variable current in a step S**55**. Here, the date when a change to coin is previously performed means the date when the step counts are previously converted into the earned coins.

In a succeeding step S**57**, it is determined whether or not the date indicated by the variable current is a current day (today). If "YES" in the step S**57**, that is, if the date indicated by the variable current is a current day, it is determined whether or not the date indicated by the variable current is the date when a change to coin is previously performed in a step S**59**. Here, the CPU **50** determines whether or not the date indicated by the previous-time day data **102***e* is coincident with the date indicated by the variable current.

If "NO" in the step S**59**, that is, if the date indicated by the variable current is not coincident with the date when a change to coin is previously performed, the date when a change to coin is previously performed is not identical with the current day, and therefore, in a step S**61**, (the current accumulative amount of step counts—the accumulative amount of step counts until the previous day)/10 is evaluated as the number of currently earned coins, and the process proceeds to a step S**65** shown in FIG. **11**. Here, if the value is evaluated with a remainder, the earned coin is added by one. Or, if the value is evaluated with a remainder, the step count may be rounded down. This holds true hereunder. On the other hand, if "YES" in the step S**59**, that is, if the date indicated by the variable current is the date when a change to coin is previously performed, a change to coins is previously performed on the date the same as the current day, and therefore, (the current accumulative amount of step counts—the previous accumulative amount of step counts)/10 is calculated as the number of currently earned coins, and the process proceeds to a step S**83** shown in FIG. **12**.

In the step S**65** shown in FIG. **11**, it is determined whether or not the number of currently earned coins is equal to or more than 100. If "YES" in the step S**65**, the number of currently earned coins is set (corrected) to 100 to add it to the total earned coin count in a step S**67**, and the process proceeds to a step S**71**. Thus, by executing the processing in the step S**67**, the maximum number of earned coins that can be converted a day is restricted. If an unlimited number of earned coins that can be converted a day is allowed, a large difference occurs in the game processing between the users or the players who are different in amounts of walking. This is also because by restricting the number of earned coins that can be converted a day, it is possible to urge the user or the player to make moderate walking continuously. This holds true for a case that the number of earned coins is restricted hereunder. However, the unlimited number of earned coins that can be converted a day may be allowed. On the other hand, if "NO" in the step S**65**, that is, if the number of currently earned coins is less than 100, the number of currently earned coins is added to the current total earned coin count in a step S**69**, and the process proceeds to the step S**71**.

Additionally, as shown in FIG. **12**, in the step S**83**, it is determined whether or not the sum of the number of previously earned coins and the number of currently earned coins is equal to or more than 100. Here, the number of previously earned coins is the number of earned coins indicated by the previously earned coin count data **1030**. If "YES" in the step S**83**, that is, if the sum of the number of previously earned coins and the number of currently earned coins is equal to or more than 100, 100 is added after the number of previously earned coins is subtracted from the current total earned coin count in a step S**85**, and the process proceeds to the step S**71** shown in FIG. **11**. That is, the maximum number of earned coins that can be earned a day is restricted. On the other hand, if "NO" in the step S**83**, that is, if the sum of the number of previously earned coins and the number of currently earned coins is less than 100, the number of currently earned coins is added to the current total earned coin count in a step S**87**, and then, the process proceeds to the step S**71**.

Returning to FIG. **11**, in the step S**71**, the current accumulative amount of step counts is set to the previous accumulative amount of step counts, and in a step S**73**, the step counts on the current day is set to the step counts on the previous-time day. In addition, in a step S**75**, the current day is set to the previous-time day, and in a step S**77**, the number of currently earned coins is set to the number of previously earned coins. Here, the step counts on the current day is a total value of step counts indicated by the m-th step count data **102***m* dated today out of the accumulative step count data **102***a*. The current day is a today's date to be calculated on the basis of the time counted by the RTC **68***b*.

Here, in this embodiment, in the step S**77**, the number of currently earned coins is set to the number of previously earned coins for simplicity, but strictly, the processing is different between a case that "YES" is determined in the step S**59** and a case that "NO" is determined in the step S**59**. More specifically, in a case that "NO" is determined in the step S**59**, the processing in the step S**77** is as it is, but in a case that "YES" is determined in the step S**59**, the sum of the number of previously earned coins and the number of currently earned coins is set to the number of previously earned coins in the step S**77**.

This is because that if the step counts are converted into earned coins three times or more a day, whether or not the sum of the earned coins at latest two times is above 100 is determined in the step S**83** described later, resulting in inconvenience.

Then, in a step S**79**, it is determined whether or not the current total earned coin count is equal to or more than 3000. If "NO" in the step S**79**, the entire processing is returned as it is. On the other hand, if "YES" in the step S**79**, the total earned coin count is set to 3000 in a step S**81**, and the process returns to the entire processing. That is, by executing the processing in the step S**81**, a restriction is imposed on the total earned coin count. The reason why the restriction is imposed on the total earned coin count is to prevent a large difference in the content of the game from occurring between the users or the players who frequently carry the game apparatus **10** and the users or the players who do not frequently carry the game apparatus **10**. That is, this is because of reducing unfairness between the users or the players.

Additionally, as shown in FIG. **10**, if "NO" in the step S**57**, it is determined whether or not the date indicated by the variable current is the previous-time day in a step S**89** shown in FIG. **13**. If "NO" in the step S**89**, that is, if the date indicated by the variable current is not the previous-time day, all the step counts on the date indicated by the variable current has not yet been converted into coins, the step counts on the date indicated by the variable current/10 is calculated as the number of currently earned coins in a step S**91**, and the process proceeds to a step S**95**. On the other hand, if "YES" in the step S**89**, that is, if the date indicated by the variable current is the previous-time day, out of all the step counts on the date indicated by the variable current, a part (step counts on the previous-time day) is converted into coins, and the rest is not converted into coins, and therefore, in a step S**93**, (the step counts on the date indicated by the variable current—the step counts on the previous-time day)/10 is calculated as the number of currently earned coins, and the process proceeds to a step S**105** shown in FIG. **14**.

In the step S**95**, it is determined whether or not the number of currently earned coins is equal to or more than 100. If "YES" in the step S**95**, the number of currently earned coins is set to 100 which is added to the total earned coin count in a step S**97**, and the process proceeds to a step S**101**. On the other hand, if "NO" in the step S**95**, the number of currently earned coins is added to the current total earned coin count in a step S**99**, and the process proceeds to the step S**101**.

Additionally, as shown in FIG. **14**, in the step S**105**, it is determined whether or not the sum of the number of previously earned coins and the number of currently earned coins is equal to or more than 100. If "YES" in the step S**105**, the number of previously earned coins is subtracted from the current total earned coin count, and 100 is added thereto in a step S**107**, and the process proceeds to the step S**101** shown in FIG. **13**. On the other hand, if "NO" in the step S**105**, the number of currently earned coins is added to the current total earned coin count in a step S**109**, and the process proceeds to the step S**101**.

In the step S**101**, the number of currently earned coins is set to the number of previously earned coins. Then, in a step S**103**, **1** is added to the variable current, and the process returns to the step S**57** shown in FIG. **10**.

That is, by repeating the processing in the steps S**57**, S**89** to S**109**, the step counts from the date when a change to coin is previously performed to the date previous to the current day (today) are converted into the earned coins every day.

FIG. **15** and FIG. **16** are flowcharts showing the first application executing processing shown in the step S**7** in FIG. **8**. As shown in FIG. **15**, when starting the first application executing processing, the CPU **50** determines whether or not purchasing the special item is selected in a step S**111**. Here, the CPU **50** determines whether or not any one of the button images **310**, **312** is turned on on the item purchasing screen **300** shown in FIG. **4**(B) by the user or the player.

If "NO" in the step S**111**, that is, if the purchasing the special item is not selected, the process proceeds to a step S**129** shown in FIG. **16**. On the other hand, if "YES" in the step S**111**, that is, if purchasing the special item is selected, the number of earned coins N_A necessary for purchasing the special item (special items A, B in this embodiment) is acquired in a step S**113**. Here, the number of earned coins N_A necessary for purchasing the special items (A, B) is decided in advance.

In a succeeding step S**115**, the current total earned coin count T indicated by the total earned coin count data **1028** is read. In a next step S**117**, it is determined whether or not the total earned coin count T is equal to or more than the necessary number of earned coins N_A. If "NO" in the step S**117**, that is, if the total earned coin count T is less than the necessary number of earned coins N_A, a message that purchasing the selected special item is impossible is displayed in a step S**119**, and the process proceeds to a step S**127**.

On the other hand, if "YES" in the step S**117**, that is, if the total earned coin count T is equal to or more than the necessary number of earned coins N_A, T-N_A is set to the total earned coin count T in a step S**121**, and the selected special item is stored in the first application memory area **104** as a purchased special item (possessed special item) in a step S**123**. That is, the flag as to the selected special item is turned on to thereby update the item data **104***a*. In a next step S**125**, processing by using the purchased special item stored in the first application memory area **104** is executed, and the process proceeds to the step S**127**.

Here, in this embodiment, in a case that the special item is purchased, processing by using the special item (purchased special item) is immediately executed. However, this is a mere one example, and the processing by using the purchased special item may be executed when there is an instruction from the user or the player. This holds true for a case that the normal item described later is purchased.

Furthermore, the processing by using the purchased special item corresponds to the processing of, if the purchased special item is a tool, performing a motion with the use of the tool by the player character. Also, this corresponds to the processing of making the player character invincible for a predetermined time by using the purchased special item, for example. These are mere examples, and there is no need of being restricted thereto.

Returning to FIG. **15**, in the step S**127**, another processing is executed to return to the entire processing. Here, in the step S**127**, according to an instruction from the player, the CPU **50** makes the player character perform an arbitrary action, makes the player character move, etc. Furthermore, according to a control by the computer (CPU **50**), the non-player character moving and so forth independent of an operation by the player is made to perform an arbitrary action, and the non-player character is made to move, and etc. In addition, the CPU **50** calculates scores and determines game clear and game over. Then, the CPU **50** executes processing according to a game event, processing of outputting a sound (music), and processing of displaying (updating) the game screen.

As shown in FIG. **16**, in the step S**129**, it is determined whether or not purchasing the normal item is selected. Here, the CPU **50** determines whether or not any one of the button images **302**-**308** is turned on on the item purchasing screen **300** shown in FIG. **4**(B) by the user or the player. If "NO" in the step S**129**, that is, if the normal item is not to be purchased, the process proceeds to the step S**127** shown in FIG. **15** as it is. On the other hand, if "YES" in the step S**129**, that is, if the normal item is to be purchased, the number of normal coins N_Z, necessary for purchasing the normal item (the first to fourth items in this embodiment) is acquired in a step S**131**. Here, the number of normal coins N_Z necessary for purchasing each of the first to fourth items is decided in advance.

In a succeeding step S**133**, a current total number of normal coins W indicated by the total normal coin count data **104***b* is read. In a next step S**135**, it is determined whether or not total number of normal coins W is equal to or more than the necessary number of earned coins N_Z. If "NO" in the step S**135**, that is, if the total number of normal coins W is less than the necessary number of earned coins N_Z, a message that purchasing the selected normal item is impossible is displayed in a step S**137**, and the process proceeds to the step S**127**.

On the other hand, if "YES" in the step S**135**, that is, if the total number of normal coins W is equal to or more than the necessary number of earned coins N_Z, $W-N_Z$ is set to the total number of normal coins W in a step S**139**, and the selected normal item is stored as a purchased normal item (possessed normal item) in the first application memory area **104** in a step S**141**. That is, the flag as to the selected normal item is turned on to thereby update the item data **104***a*. In a next step S**143**, processing by using the purchased normal item stored in the first application memory area **104** is executed, and the process proceeds to the step S**127**. Thus, even without using the earned coins, the normal item can be purchased by using the normal coins. That is, without the earned coins, the first application (game) can be advanced.

FIG. **17** is a flowchart showing second application executing processing in the step S**11** shown in FIG. **8**. As shown in FIG. **17**, when starting the second application executing processing, the CPU **50** determines whether or not the special course is selected in a step S**161**. Here, the CPU **50** determines whether or not the button image **410** or the button image **412** is turned on on the course selecting screen **400** shown in FIG. **4**(C). If "NO" in the step S**161**, that is, if the special course is not selected, it is determined whether or not the normal course is selected in a step S**163**. Here, the CPU **50** determines whether or not any one of the button images **402**-**408** is turned on on the course selecting screen **400** shown in FIG. **4**(C).

If "NO" in the step S**163**, that is, if the normal course is not selected, the process returns to the entire process as it is. On the other hand, if "YES" in the step S**163**, that is, if the normal course is selected, game processing in the selected normal course is executed in a step S**165**, and the process returns to the entire process.

Here, in the step S**165**, the CPU **50** moves the player character in the selected normal course according to an instruction by the user or the player. Furthermore, the computer (CPU **50**) moves the non-player character in the selected normal course. In addition, the CPU **50** calculates scores and determines game clear and game over. Then, the CPU **50** executes processing according to a game event, processing of outputting a sound (music), and processing of displaying (updating) the game screen. Thus, even without using the earned coins, it is possible to play in the normal course. That is, even without the earned coins, the second application (game) can be advanced.

On the other hand, if "YES" in the step S**161**, that is, if the special course is selected, it is determined whether or not the permission flag of the selected special course (special courses A, B in this embodiment) is turned on with reference to the course permission data **106***a* in a step S**167**. If "YES" in the step S**167**, that is, if the permission flag of the selected special course is turned on, the process proceeds to a step S**183**. On the other hand, if "NO" in the step S**167**, that is, if the permission flag of the selected special course is turned off, the number of earned coins N_B necessary for permitting the selected special course is acquired in a step S**169**. Here, the number of earned coins N_B necessary for permitting each of the special courses A, B is decided in advance. In a next step S**171**, the current total earned coin count T is read with reference to the total earned coin count data **1028**.

Then, in a step S**173**, it is determined whether or not the total earned coin count T is equal to or more than the necessary number of earned coins N_B. If "NO" in the step S**173**, that is, if the total earned coin count T is less than the necessary number of earned coins N_B, a message that playing on the selected special course is impossible is displayed in a step S**175**, and the process returns to the entire processing. On the other hand, if "YES" in the step S**173**, that is, if the total earned coin count T is equal to or more than the necessary number of earned coins N_B, T-N_B is set to the total earned coin count T in a step S**179**, and the permission flag of the selected special course is turned on in a step S**181**. Accordingly, the course permission data **106***a* is updated.

Successively, in the step S**183**, game processing on the selected special course is executed, and the process returns to the entire processing. In the step S**183**, the CPU **50** moves the player character on the selected special course according to an instruction from the user or the player. Furthermore, the computer (CPU **50**) moves the non-player character on the selected special course. In addition, the CPU **50** calculates scores and determines game clear and game over. Then, the CPU **50** executes processing according to a game event, processing of outputting a sound (music), and processing of displaying (updating) the game screen.

Here, as described above, the normal course (the first to fourth courses) is selectable irrespective of the number of earned coins, and thus, the processing of turning the permission flag on, etc. is not required.

FIG. **18** and FIG. **19** are flowcharts showing step count detecting processing by the micon **68**. As shown in FIG. **18**, when starting the step count detecting processing, the micon **68** starts the timer **152***a* in a step S**201**. In a next step S**203**, it is determined whether or not an acceleration being equal to or more than a predetermined value is detected. If "NO" in the step S**203**, that is, if an acceleration being equal to or more than a predetermined value is not detected, it is determined that the step counts are not detected, and the process proceeds to a step S**213** shown in FIG. **19** as it is. On the other hand, if "YES" in the step S**203**, that is, if an acceleration being equal to or more than a predetermined value is detected, it is determined that step counts are detected, and the step count counter **152***b* is incremented in a step S**205**.

Successively, in a step S**207**, it is determined whether or not a first unit of time has elapsed. Here, the micon **68** determines whether or not the first unit of time (one hour) has elapsed with reference to the count value of the timer **152***a*. If "NO" in the step S**207**, that is, if the first unit of time has not elapsed, the process proceeds to a step S**217** shown in FIG. **19** as it is. On the other hand, If "YES" in the step S**207**, that is, if the first unit of time has elapsed, a date and time is added to the count value of the step count counter **152***b*, and the added one is written to the memory **68***a* in a step S**209**. Here, in the step S**209**, the n-th step count data **152***n* is collectively stored for each unit of time. At this time, the micon **68** calculates the date and time (date and time) from the time counted by the RTC **68***b*, and adds the date and time data corresponding to the calculated date and time to the n-th step count data **152***n*. In a next step S**211**, the step count counter **152***b* is reset, and the process proceeds to the step S**213**.

As shown in FIG. **19**, in the step S**213**, it is determined whether or not a second unit of time has elapsed. Here, the micon **68** determines whether or not the second unit of time (three hours) has elapsed with reference to the count value of the timer **152***a*. If "NO" in the step S**213**, that is, if the second unit of time has not elapsed, the process proceeds to the step S**217** as it is. On the other hand, If "YES" in the step S**213**, that is, if the second unit of time has elapsed, the step count value to which the date and time is added is output to the CPU **50** in a step S**215**, and the process proceeds to the step S**217**. That is, even if the game apparatus **10** is in the sleep state, the accumulative step count data **152***c* is stored (moved to) in the memory for saved data **56** every second unit of time. Although illustration is omitted, in the step S**215**, the micon **68** activates the CPU **50**, and controls the power supply circuit **70** under the instruction of the CPU **50** to start supplying the electric power to the memory controlling circuit **54** and the memory for saved data **56** as described above.

Then, in the step S**217**, it is determined whether to be ended or not. Here, the micon **68** determines whether or not there is an end instruction of counting the step counts from the CPU **50**. Here, strictly, when the opening and closing switch **42** is turned on, the micon **68** activates the clock of the CPU **50**, and controls the power supply circuit **70** to start supplying the electric power to each of the circuit components. Then, the CPU **50** that returns from the sleep state instructs the micon **68** to stop counting the step counts.

If "NO" in the step S**217**, that is, if it is not to be ended, the process returns to the step S**203** shown in FIG. **18** as it is. On the other hand, if "YES" in the step S**217**, that is, if it is to be ended, the step count detecting processing is ended.

Furthermore, as described above, on the main menu screen **200** shown in FIG. **4**(A), other applications (third application, fourth application, here) may sometimes be selected. For example, in FIG. **20**(A), during a game according to a program of the third application (third application program), a hint displaying screen **500** to be displayed on the second LCD **18** (first LCD **16** may be possible) is shown. Also, in FIG. **20**(B), during a game according to a program of the fourth application (fourth application program), a growth screen **600** to be displayed on the second LCD **18** (first LCD **16** may be possible) is shown.

As shown in FIG. **20**(A), on the hint displaying screen **500**, a selection screen **506** for selecting whether or not a hint is seen is displayed on the game screen including a player character **502**, an enemy character **504** and a background. Although the detailed description is omitted, the selection screen **506** is automatically displayed according to the processing of the third application program (game program) or displayed according to an instruction from the player.

Furthermore, on the selection screen **506**, a text for inquiring whether a hint is to be seen is displayed, and a button image **508** and a button image **510** are displayed. When the button image **508** is turned on, seeing a hint is selected. Alternatively, if the button image **510** is turned on, not seeing a hint is selected.

When the button image **508** is turned on, a hint not shown is displayed. For example, hints, such as a way to defeat the enemy character **504**, a thing to be done next by the player are displayed in text, and a direction in which the player character **502** has to proceed is displayed by a designation image like an arrow. On the other hand, when the button image **510** is turned on, the selection screen **506** is erased (undisplayed).

Here, in a case that the hint is seen, the earned coins are required to be used, and unless the total number of earned coins is equal to or more than the number necessary for seeing the hint, the selection screen **506** is not displayed. Or, even if the selection screen **506** is displayed, displaying a hint cannot be selected. Thus, on the selection screen **506** (region different from the selection screen **506**), the current total number of earned coins and the number of coins necessary for seeing a hint may be displayed.

Thus, by using the earned coins, a hint can be displayed, and this makes it possible to play this game easily even if the game is a high difficulty level, and this makes it possible even for beginners who are unskilled in games to play this game easily. Also, the hint is not necessarily displayed, and this makes it possible for advanced players of games to have exhilaration and a sense of accomplishment by capturing this game without seeing the hint. Accordingly, irrespective of the level of proficiency with the game, it is possible for all the players to enjoy playing this game.

Here, by displaying a hint, the advancement of the game by the player is supported, but there is no need of being restricted thereto. For example, by using earned coins, the ability of the player character **502** is changed to thereby support the advancement of the game. In such a case, the player characters **502** is increased in the remaining number, restored in the physical strength, is heightened in the attack power for a certain period of time, is made invincible for a certain period of time, or is increased in the number of allies, for example. Moreover, if there is a restriction on the number of attacks, the number of attacks is increased. In addition, the computer (CPU **50**) may automatically clear a specific difficult course and mission, regard them as being cleared, and see the weak point of the enemy character. Also, an object which can be acquired after the advancement of the game without using the earned coins (object acquired through the normal route) may immediately be acquired without advancing the game by using the earned coins when there is not time to spend for the game, and so forth.

Alternatively, on the growth screen **600** shown in FIG. **20**(B), a display pane **602**, a display pane **604**, and a display pane **606** are provided. In the display pane **602**, a character **650** before growing possessed by the player or the player character is displayed. In the display pane **604**, a grown character **652** from the character **650** is displayed. In the display pane **606**, a text for inquiring whether or not to heighten the growth rate is displayed, and a button image **608** and a button image **610** are displayed. When the button image **608** is turned on, heightening the growth rate is selected. When the button image **610** is turned on, not heightening the growth rate is selected.

When the button image **608** is turned on, the growth rate of the character **650** is changed. For example, whereas it generally takes several hours to several days in the game time (in the real time) for growing from the character **650** to the character **652**, the character is immediately grown, or it takes a time shorter than several times to several days for the growth. On the other hand, when the button **610** is turned on, not changing the growth rate is selected to thereby undisplay (erase) the growth screen **600**, returning to the game screen not shown.

Accordingly, by using earned coins, the game can be played in fast-forward, and similar to the third application program, the advancement of the game is supported. Here, the growth rate of the character is heighten (enhanced in the growth), but there is no need of being restricted thereto. As another example, the growth of crops and flowers may be enhanced. Also, a time until architecture like a building, etc. is completed may be shortened. In addition, in a game in which regular time intervals are required to make the player character perform actions (attack, defense, etc.), for example, the time intervals can be shortened. Moreover, in place of heightening the growth rate, the level of the player or the player character may be increased sooner than in normal playing.

Also, in this embodiment, the game (the third application) displaying the hint displaying screen **500** in FIG. **20**(A) and the game (the fourth application) displaying the growth screen **600** in FIG. **20**(B) are described as separates games, but they may be different scenes in the same game (application).

In a case that the third application and the fourth application are executable in the game apparatus **10**, a third application program **700** shown in FIG. **21**(A) and a fourth application program **750** shown in FIG. **21**(B) are stored in the memory for saved data **56** shown in FIG. **5**.

As shown in FIG. **21**(A), the third application program **700** is made up of an image displaying program **700***a*, a display selecting program **700***b*, a total earned coin count acquiring program **700***c*, a hint displaying program **700***d*, etc.

The image displaying program **700***a* and the total earned coin count acquiring program **700***c* are the same as the above-described image displaying program **94***a* and total earned coin count acquiring program **94***e*, and thus, a redundant description is omitted.

The display selecting program **700***b* is a program for displaying the hint displaying screen **500** as shown in FIG. **20**(A) according to an instruction from the player or a predetermined event, and determining whether or not the button image **508** or the button image **510** is turned on on the hint displaying screen **500**. The hint displaying program **700***d* is a program for displaying a hint in response to the button image **508** being turned on.

Although illustration is omitted, in the third application program **700**, a main processing program, a sound outputting program, a backup program, a various processing program, etc. are included.

Also, although illustration is omitted, in the data memory area **100** of the memory for saved data **56**, a memory area for third application is provided, and in the memory area for third application, game data including data for giving a hint is stored. Here, the data for giving a hint is text data, image data, audio data, etc. as to a hint.

Furthermore, as shown in FIG. **21**(B), the fourth application program **750** is made up of an image displaying program **750***a*, a growth selecting program **750***b*, a total earned coin count acquiring program **750***c*, a growth rate changing program **750***d*, etc.

The image displaying program **750***a* and the total earned coin count acquiring program **750***c* are the same as the above-described image displaying program **94***a* and total earned coin count acquiring program **94***c*, and thus, a redundant description is omitted.

The growth selecting program **750***b* is a program for displaying the growth screen **600** as shown in FIG. **20**(B) according to an instruction by the player or a predetermined event, and determining whether or not the button image **608** or the button image **610** is turned on on the growth screen **600**. The growth rate changing program **750***d* is a program for changing the growth rate of the character in response to the button image **608** being turned on.

Although illustration is omitted, in the fourth application program **750**, a main processing program, a sound outputting program, a backup program, a various processing program, etc. are included.

Moreover, although illustration is omitted, in the data memory area **100** of the memory for saved data **56**, a memory area for fourth application is provided, and in the memory area for fourth application, game data including data of the growth rate as to a predetermined character is stored.

FIG. **22** shows a flowchart showing third application executing processing, and FIG. **23** shows a flowchart showing fourth application executing processing. Although illustration is omitted, similar to the steps S5 to S**11** shown in FIG. **8**, whether the third application or the fourth application is selected is determined, and the selected application is executed. Such selecting and executing processing is inserted between the steps S**9** and S**13**, or executed in place of the processing in the steps S**5** to S**11**.

As shown in FIG. **22**, when starting the third application executing processing, the CPU **50** determines whether or not displaying a hint is instructed in a step S**251**. Here, the CPU **50** determines whether or not the button image **508** is turned on on the hint displaying screen **500** shown in FIG. **20**(A). It should be noted that the hint displaying screen **500** is displayed not directly after the third application executing processing is started, but when a predetermined condition is satisfied, such as an occurrence of a predetermined event in the game, and an input of an instruction from the player, for example.

If "NO" in the step S**251**, that is, if the button image **508** is not turned on, it is determined whether or not undisplaying a hint is instructed in a step S**253**. That is, the CPU **50** determines whether or not the button image **510** is turned on on the hint displaying screen **500** shown in FIG. **20**(A).

If "NO" in the step S**253**, that is, if the button image **510** is not turned on, the process proceeds to a step S**269** as it is. On the other hand, if "YES" in the step **S253**, that is, if the button image **510** is turned on, the selection screen **506** is undisplayed in a step **S255**, and the process proceeds to the step **S269**.

Alternatively, if "YES" in the step **S251**, that is, if the button image **508** is turned on, the number of earned coins N_C necessary for displaying the hint is acquired in a step **S257**. Here, the number of earned coins N_C necessary for displaying a hint is decided in advance.

In a succeeding step **S259**, the current total number of earned coins T indicated by the total coin count data **1028** is read. In a next step **S261**, it is determined whether or not the total number of earned coins T is equal to or more than the necessary number of earned coins N_C. If "NO" in the step **S261**, that is, if the total number of earned coins T is less than the necessary number of earned coins N_C, a message that displaying a hint is impossible is displayed in a step **S263**, and the process proceeds to the step **S269**. On the other hand, if "YES" in the step **S261**, that is, if the total number of earned coins T is equal to or more than the necessary number of earned coins N_C, T-N_C is set to the total number of earned coins T in a step **S265**, a hint as described above is displayed in a step **S267**, and the process proceeds to the step **S269**. That is, by using (consuming) a necessary number of earned coins, the hint can be displayed.

In the step **S269**, other processing is executed, and the process returns to the entire process shown in FIG. **8** and FIG. **9**. In the step **S269**, the CPU **50** makes the player character **502** perform an arbitrary action, move the player character **502**, and so forth according to the instruction from the player in response to the hint displayed in the step **S267**. Furthermore, according to a control by the computer (CPU **50**), the non-player character (enemy character **504**, etc.) moving and so forth independent of an operation by the player is made to perform an arbitrary action, and is made to move. In addition, the CPU **50** calculates scores and determines game clear and game over. Then, the CPU **50** executes processing according to a game event, processing of outputting a sound (music), and processing of displaying (updating) the game screen.

As shown in FIG. **23**, when starting the fourth application executing processing, the CPU **50** determines whether or not the growth rate is heightened in a step **S281**. Here, the CPU **50** determines whether or not the button image **608** is turned on on the growth screen **600** shown in FIG. **20**(B). Here, the growth screen **600** is displayed not directly after the fourth application executing processing is started, but when a predetermined condition is satisfied, such as an occurrence of a predetermined event in the game, and an input of an instruction from the player, for example.

If "NO" in the step **S281**, that is, if the button image **608** is not turned on, it is determined whether or not the growth rate is not heightened in a step **S283**. Here, the CPU **50** determines whether or not the button image **610** is turned on on the growth screen **600** shown in FIG. **20**(B). If "NO" in the step **S283**, that is, if the button image **610** is not turned on, the process proceeds to a step **S299** as it is. On the other hand, if "YES" in the step **S283**, that is, if the button image **610** is turned on, it is determined that the growth rate is not heightened, the growth screen **600** is undisplayed in a step **S285**, and the process proceeds to the step **S299**.

Furthermore, if "YES" in the step **S281**, that is, if the button image **608** is turned on, the number of earned coins N_D necessary for heightening the growth rate is acquired in a step **S287**. Here, the number of earned coins N_D necessary for heightening the growth rate is decided in advance.

In a succeeding step **S289**, the current total number of earned coins T indicated by the total coin count data **1028** is read. In a next step **S291**, it is determined whether or not the total number of earned coins T is equal to or more than the necessary number of earned coins N_D. If "NO" in the step **S291**, that is, if the total number of earned coins T is less than the necessary number of earned coins N_D, a message that heightening the growth rate is impossible is displayed in a step **S293**, and the process proceeds to the step **S299**. On the other hand, if "YES" in the step **S291**, that is, if the total number of earned coins T is equal to or more than the necessary number of earned coins N_D, T-N_D is set to the total number of earned coins Tin a step **S295**, the growth rate is changed (heightened) in a step **S297**, and the process proceeds to the step **S299**. That is, by using (consuming) a necessary number of earned coins, the game spending a time can be played in fast-forward.

In the step **S299**, other processing is executed, and the process returns to the entire processing shown in FIG. **8** and FIG. **9**. In the step **S299**, for example, the CPU **50** makes the character **650** grow on the basis of the growth rate changed in the step **S297**, makes the player character or the character **650** perform an arbitrary action, makes the player character or the character **650** move and so forth according to an instruction from the player. Furthermore, according to a control by the computer (CPU **50**), the non-player character (enemy character, etc.) moving independent of an operation by the player is made to perform an arbitrary action, and is made to move. In addition, the CPU **50** calculates scores and determines game clear and game over. Then, the CPU **50** executes processing according to a game event, processing of outputting a sound (music), or processing of displaying (updating) the game screen.

According to this embodiment, the earned coins evaluated through conversion as a correlation value of the step counts are stored in the shared data memory area, and this can commonly be used among a plurality of applications executed by the game apparatus. In addition, in this embodiment, by merely carrying the game apparatus in the sleep state, it becomes possible to acquire data from other game apparatuses and access points through the in-passing communication and the unconscious communication, and acquire the special item, play on the special course, gain a hint, and play the game in fast-forward depending on the number of step counts.

Here, in this embodiment, a game apparatus having an in-passing communication function and an unconscious communication function is explained, but a game apparatus with other functions (applications) may be possible.

Also, in this embodiment, when the main menu screen is displayed, the coin earning processing is executed, but there is no need of being restricted thereto. When the game apparatus shifts from the sleep state to the non-sleep state, this may be executed. Alternatively, this may be executed in both cases.

In addition, in this embodiment, in a case that the game apparatus is closed, a shift to the sleep mode is made, but there is no need of being restricted thereto. In a case that there is no operation for a certain period of time (10 minutes, for example) with the main power supply of the game apparatus turned on (normal mode), or in a case that a predetermined operation is executed, a shift to the sleep mode may be made. In such a case, if any operation is executed or if a predetermined operation is executed in the sleep state, a shift (return) to the non-sleep mode (normal mode) may be made.

In addition, in this embodiment, as one example of the power-saving mode, the sleep mode is shown to thereby perform a power control in the game apparatus as described above, but the power of the LCD may merely be turned off.

Furthermore, in this embodiment, the normal item and the special item are displayed on the same screen on which an item to be purchased is selected, but the normal item and the special item may be displayed on the different screens. This holds true for the normal course and the special course.

In addition, in this embodiment, when the special item is selected, the total earned coin count and the number of earned coins necessary for purchase are compared to determine whether or not the special item can be purchased. As another embodiment, when the item purchasing screen is displayed, the total earned coin count and the number of earned coins necessary for purchase are compared to determine whether or not the special item can be purchased. The special item that cannot be purchased may be non-displayed or grayed out. This holds true for the normal item and the special course (course selecting screen). Also, as to the display of a hint (hint displaying screen) and the change of the growth rate (growth screen), in a case that the total number of earned coins is less than the necessary number of earned coins, a message that displaying a hint is impossible or a message that changing the growth rate is impossible may be displayed without displaying the screen itself.

Also, in this embodiment, steps counts are converted into earned coins so as to commonly be used in a plurality of applications, but the step counts may be used as it is.

Moreover, the configuration of the game apparatus need not be restricted to that of this embodiment. For example, one camera or no camera may be appropriate. Additionally, the touch panel may be provided on the two LCDs.

Furthermore, in this embodiment, the micon starts or stops counting step counts according to an instruction from the CPU, but the micon may start counting step counts when the opening and closing switch is turned off, and stop counting step counts when the opening and closing switch is turned on.

Additionally, in this embodiment, the earned coin count data out of the shared data memory area is only necessary to be shared with a plurality of applications, and therefore, at least the earned coin count data is included in the shared data memory area, and the accumulative step count data, the previous step count accumulative data, the current step count accumulative data, the previous-time day data and the previous-time day step count data except for it may be included in another memory area (main body-dedicated memory area, for example) that cannot be shared.

In addition, in this embodiment, by opening and closing a foldable game apparatus, the normal mode and the sleep mode are switched. However, a cover capable of being opened and closed is provided to the game apparatus, and by opening and closing the cover, the normal mode and the sleep mode may be switched. Alternatively, a jacket capable of containing the game apparatus is provided, and by taking the game apparatus out from the jacket or putting it in the jacket, the normal mode and the sleep mode can be switched. That is, in a case that the user or the player does not use the apparatus, the sleep mode may be set to thereby execute an in-passing communication and the unconscious communication and to count step counts.

Moreover, the present invention can be applied to other hand-held information terminals implementing easy portability, such as cellular phone, a PDA, etc. without being restricted to the handheld game apparatus.

This invention can also be applied to a console game apparatus which is set at home to be used, or the like, a personal computer terminal, a game system in which respective processing for game processing are distributedly performed by each of a plurality of computers, etc.

Also, in the above-described embodiment, a pedometer function is provided to the game apparatus **10**, but a pedometer is provided separately from the game apparatus **10**, and step counts measured by the pedometer may be acquired by the game apparatus. For example, a game system **1000** shown in FIG. **24** includes the game apparatus **10** and a pedometer **1200**. The game apparatus **10** and the pedometer **1200** transmit and receive data by a short distance wireless communication, such as IrDA, for example. They may be connected by wire so as to make communications.

It should be noted that the game apparatus **10** shown in the above-described embodiment is used here, but by eliminating and so forth the acceleration sensor **88** from the game apparatus **10**, the pedometer function may be lost.

In a case that the game system **1000** as shown in FIG. **24** is configured, a memory card **28** for communicating with the pedometer **1200** is used. The electric configuration of the memory card **28** is shown in FIG. **25**.

As shown in FIG. **25**, the memory card **28** includes a connector **1100** to be coupled to a connector not shown connected to the memory card IF **62**, and the connector **1100** is connected with a ROM **1104** and a micon **1106** via a bus **1102**. The micon **1106** is connected with a backup memory **1108** and an Ir communication circuit **1110**.

The micon **1106** controls writing and reading to and from the backup memory **1108** under the control of the CPU core **34**, and controls an infrared rays communication (Ir communication) by utilizing the Ir communication circuit **1110**. That is, the CPU **50** writes and reads data to and from the backup memory **1108** via the micon **106**. Furthermore, the CPU **50** transmits and receives data with the pedometer **1200** via the micon **1106** and the Ir communication circuit **1110**. Here, although not illustrated, a communication port of the Ir communication circuit **1110** is provided at a position (on the top surface, for example) exposed when the memory card **28** is loaded into the game apparatus **10**.

The ROM **1104**, as described above, stores in advance a game program for a game to be executed by the game apparatus **10**, image data (character image, background image, item image, icon (button) image, message image, etc.), data of the sound (music) necessary for the game (sound data), etc. The backup memory **1108** stores (saves) proceeding data of the game, result data of the game, etc. As a backup memory **1108**, a nonvolatile memory, such as a flash memory, an SRAM to which power is supplied from a battery, etc. can be used.

Also, the game apparatus **10** may contain the Ir communication circuit **1110**, and may store the game program and the save data in the memory for saved data **56** within the game apparatus **10**. This makes it possible to eliminate the need for the memory card **28** to make communications with the pedometer **1200** and to make direct communications with the game apparatus **10** and the pedometer **1200**.

FIG. **26** is a perspective view showing one example of the pedometer **1200**. The pedometer **1200** has a housing **1202** in a roughly rectangular parallelepiped shape, and the housing **1202** is made small enough to be put in a pocket, etc. of the player or the user, and has lengths longitudinally and transversely in the order of 3 to 4 cm, and a thickness of the order of 1 cm, as one example. The housing **1202** is provided with a push button **1204** on one main surface (top surface). In a case that the Ir communication circuit **1110** of the memory card **28** is in a communication standby state, when the push button **1204** is pushed by the user, the pedometer **1200** starts to communicate with the memory card **28**, that is, the game apparatus **10**. Furthermore, at the end of the push button **1204**, an LED **1206** is provided. The LED **1206** is two-color LED, for example, and represents an operating condition of the pedometer **1200** by a color, and a flashing pattern. Furthermore, on the side surface (tip-end surface) of the housing **1202**, an infrared communication port **1208** is provided. Additionally, as an operating power source of the pedometer **1200**, a coin shaped lithium cell (CR2032) is used, for example, and on the other main surface (bottom surface) of the housing **1202**, a battery cover is detachably provided.

FIG. **27** is a block diagram showing one example of an electric configuration of the pedometer **1200**. The pedometer **1200** includes a micon **1210**, and the micon **1210** is connected with a shock sensor **1214** via an amplifying circuit **1212**. The micon **1210** is further connected with the push button **1204**, the LED **1206**, an EEPROM **1216** and an Ir communication circuit **1218**.

The micon **1210** is a low power consumption micon integrated with a step counter algorithm, and controls an entire operation of the pedometer **1200**, such as detection of output data from the shock sensor **1214**, writing and reading data to and from the EEPROM **1216**, flashing of the LED **1206**, and an infrared rays communication by utilizing the Ir communication circuit **1218**, etc.

The shock sensor **1214** is a sensor for detecting a motion according to walking by the player or the user, and a shock sensor (acceleration sensor) used for an impact detection of an HDD can be applied thereto. The shock sensor **1214** is arranged in two-axis directions in this embodiment, and this makes it possible for the user to count or detect a step count (the number of steps) with the pedometer **1200** in the pocket, the bag, etc. The output from the shock sensor **1214** is amplified in the amplifying circuit **1212** and then input to the micon **1210**. Since the micon **1210** contains an AD converter, the micon **1210** performs a sampling on the output from the shock sensor **1214** to acquire output data (acceleration data). The micon **1210** counts the step counts on the basis of the output data and the step counter algorithm, and sequentially stores an accumulated value (the number of counts) of the step counts per unit of time in the EEPROM **1216**. That is, the EEPROM **1216** stores a historical record of step count values per unit of time as step count data.

Here, there is a limit to the storage area for the step count data in the EEPROM **1216**. For example, in a case that a step count value is stored every minute, the EEPROM **1216** can store about seven day's historical records of the step counts. In a case that the storage area becomes full, the oldest-stored step count value is overwritten. Furthermore, in this embodiment, the unit of time for recording the step count value is set to one minute, but this may be changed to one hour, one day, etc., for example, as necessary.

The micon **1210** controls the color and the flashing pattern of the LED **1206** depending on the operating condition or state. For example, in a case that the number of steps on that day is above the step count set in advance, the color of the LED **1206** is changed from red to yellow green. Furthermore, when the push button **1204** is pushed, the micon **1210** starts communications with the game apparatus **10** (memory card **28**) by utilizing the Ir communication circuit **1218**, and blinks the LED **1206** for confirming the start of the communications and checking the operation.

When the push button **1204** is pushed to start communications, the micon **1210** reads an ID (identification information) of the pedometer **1200** from an internal ROM or the EEPROM **1216**, and transmits the data including the ID to the game apparatus **10** through the Ir communication circuit **1218**. Then, when receiving a request of step count data from the game apparatus **10**, the micon **1210** reads necessary step count data from the EEPROM **1216** and transmits the same to the game apparatus **10**.

Here, the game apparatus **10** stores the date and time information when the step count data is previously received from the pedometer **1200**, and requests the step count value for a necessary time or the necessary number of count values, so that the micon **1210** can read the step count value for a necessary time or the necessary number of count values as far back as the past from the current step count value, and transmit the same to the game apparatus **10**.

Also, in this game system **1000**, the game apparatus **10** need not to count step counts, and may convert the step counts into the earned coins when receiving the step count data. More specifically, in the above-described entire processing (FIG. **8** and FIG. **9**), the processing in the step S**21**, and steps S**31** to S**35** is deleted, and a step to determine whether or not step count data is received is provided between the step S**1** and the step S**3**, and when the step count data is received, the coin earning processing in the step S**3** may be executed. Furthermore, the micon **68** need not to execute the step counts detecting processing (FIG. **18** and FIG. **19**).

Here, processing of converting step counts into earned coins may be performed by the pedometer **1200**. If so, the game apparatus **10** is only necessary to receive the number of earned coins from the pedometer **1200**.

Although the present invention has been described and illustrated in detail, it is clearly understood that the same is by way of illustration and example only and is not to be taken by way of limitation, the spirit and scope of the present invention being limited only by the terms of the appended claims.

What is claimed is:

1. A game apparatus comprising an input device, the apparatus configured to at least:

measure step counts using a motion detection device;

advance a game on the basis of an input from said input device;

utilize the measured step counts in said game by converting the measured step counts into one or more earned virtual objects; and

execute processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the measured step counts.

2. The game apparatus according to claim **1**, wherein

said step counts in said game are utilized on the basis of an input from said input device, and

game processing for advancing the game is executed on the basis of an input from said input device when said step counts are not utilized, and support processing for supplementing advancement of said game in addition to said game processing is executed when said step counts are utilized.

3. The game apparatus according to claim **1**, wherein

information being a hint for advancement of said game is output when said step counts are utilized.

4. The game apparatus according to claim **1**, wherein

processing of shortening a time required for advancing said game is executed when said step counts are utilized.

5. The game apparatus according to claim **1**, wherein the apparatus is further configured to:

convert the measured step counts into a step count correlation value correlating with said step counts and accumulate the step count correlation value; and

utilize said accumulated step count correlation value.

6. The game apparatus according to claim **5**, wherein the apparatus is further configured to:

utilize said step count correlation value in said game in a case that said step count correlation value is equal to or more than a predetermined value; and

perform a subtraction on said step count correlation value when said step count correlation value is utilized in said game.

7. The game apparatus according to claim **1**, wherein the apparatus is further configured to:

switch between an unused state and a used state of said game apparatus;

determine whether or not said used state switches to said unused state; and

measure step counts when a shift to said unused state is determined.

8. The game apparatus according to claim **7**, wherein the apparatus is further configured to:

switch between a power saving mode and a normal mode; and

determine whether or not said used state shifts to said unused state by determining whether or not said normal mode shifts to said power saving mode.

9. The game apparatus according to claim **7**, wherein the apparatus is further configured to:

disable said advancement of said game; and

switch from said used state to said unused state when said advancement of said game is disabled.

10. The game apparatus according to claim **7**, wherein

a game apparatus body has an openable and closeable mechanism, the apparatus is further configured to:

switch between a closed state and an opened state of said game apparatus body, and

determine whether or not said used state shifts to said unused state by determining whether or not said game apparatus body shifts from the opened state to the closed state.

11. The game apparatus according to claim **1**, further comprising:

a communication device, wherein

said communication device automatically executes communication processing while step counts are measured.

12. The game apparatus according to claim **11**, wherein

said communication device automatically makes a search for another game apparatus, and automatically transmits and receives data with said other game apparatus when it is searched.

13. The game apparatus according to claim **11**, wherein

said communication device automatically makes a search for an access point, and automatically transmits and receives data via said access point when it is searched.

14. A game apparatus comprising an input device, the apparatus configured to at least:

acquire steps counts counted using a motion detection device;

advance a game on the basis of an input from said input device;

utilize the acquired step counts in said game by converting the acquired step counts into one or more earned virtual objects; and

execute processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the acquired step counts.

15. A non-transitory storage medium comprising a game program of a game apparatus having an input device, said game program causes a computer of said game apparatus to:

measure step counts using a motion detection device;

advance a game on the basis of an input from said input device;

utilize the measured step counts in said game by converting the measured step counts into one or more earned virtual objects; and

execute processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the measured step counts.

16. A non-transitory storage medium comprising a game program of a game apparatus having an input device, said game program causes a computer of said game apparatus to:

acquire steps counts counted using a motion detection device;

advance a game on the basis of an input from said input device;

utilize the acquired step counts in said game by converting the acquired step counts into one or more earned virtual objects; and

execute processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the acquired step counts.

17. A game controlling method of a game apparatus having an input device, the method comprising:

measuring step counts using a motion detection device;

advancing a game on the basis of the input from said input device;

utilizing the measured step counts in said game by converting the measured step counts into one or more earned virtual objects; and

executing processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the measured step counts.

18. A game controlling method of a game apparatus having an input device, the method comprising:

acquiring step counts counted using a motion detection device;

advancing a game on the basis of the input from said input device;

utilizing the acquired step counts in said game by converting the acquired step counts into one or more earned virtual objects; and

executing processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the acquired step counts.

19. A game system having an input device, the system comprising:

a processing system having at least one processor, the processing system configured to at least:

measure step counts using a motion detection device;

advance a game on the basis of an input from said input device;

utilize the measured step counts in said game by converting the measured step counts into one or more earned virtual objects; and

execute processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the measured step counts.

20. A game system comprising:

a game apparatus having an input device and a pedometer counting step counts, said game apparatus configured to at least:

acquire steps counts counted using the pedometer;

advance a game on the basis of an input from said input device;

utilize the step acquired counts in said game by converting the acquired step counts into one or more earned virtual objects; and

execute processing of supplementing advancement of said game by using the one or more earned virtual objects during execution of the game, said game being advanceable independently from the acquired step counts.

21. The game apparatus according to claim **1**, wherein supplementing advancement of said game comprises at least one of providing a hint to supplement progress of the game, supporting development of one or more features of a game character, allowing one or more items to be purchased, and/or allowing one or more courses to be accessible.

22. The game apparatus according to claim **1**, wherein the measured step counts being stored in a memory of the game apparatus are accessible by a plurality of applications utilizing the step count in each application.

23. An information processing system comprising an input device and a motion detection device configured to detect motion of a user carrying the motion detection device, the information processing system configured to:

generate motion data using the motion detection device;

store the generated motion data in a memory of the information processing system;

execute a plurality of applications stored in the memory of the information processing system, in part, using input from the input device; and

utilize the generated motion data in each application being executed by the information processing system, the generated motion data being stored in the memory of the information processing system is accessible by the plurality of applications utilizing the motion data in each application.

24. The game apparatus according to claim **1**, wherein the game apparatus is configured to measure step count data using the motion detection device when the apparatus is in a low power mode.

25. The game apparatus according to claim **1**, wherein the game apparatus is configured to measure step count data using the motion detection device when the apparatus is in a standby mode.

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